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COURS

PROFESSÉS

A L'ÉCOLE DES MINES DE PARIS

PAR

M. J. CALLON

INSPECTEUR GÉNÉRAL DES MINES

DEUXIÈME PARTIE

COURS D'EXPLOITATION DES MINES

TOME PREMIER

ATLAS

PARIS

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COURS D'EXPLOITATION DES MINES

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TABLE DES FIGURES

CONTENUES DANS LES PLANCHES

NUMÉROS DES PLANCHES	NUMÉROS DES FIGURES	DÉSIGNATION DES FIGURES	NUMÉROS DES PLANCHES	NUMÉROS DES FIGURES	DÉSIGNATION DES FIGURES
I	1 à 10	Notions préliminaires. Accidents divers que les couches peuvent présenter.	XXI	137 à 138	D°. — Appareil Delahaye. — Haveuse Carrett and Marshall.
II	11 à 21	Notions préliminaires. — Accidents divers que peuvent présenter les couches et les filons.	XXII	139 à 141	D°. — Haveuse Jones and Levick. — Appareil Leschot et Perret. — Appareil Sommelier.
III	22 à 34	Notions préliminaires. — Bègle de Schmidt. — Représentations graphiques des accidents que les gîtes peuvent présenter.	XXIII	142 à 143	D°. — Affût de l'appareil Sommelier. — Détail relatif à la forme des fleurets.
IV	35 à 36	Exemples divers de gisements. — Bassins de Mons et de Liège.	XXIV	144	D°. — Appareils François et Dubois et son affût.
V	37 à 39	Exemples divers de gisements. — Bassins de Newcastle, de la Grand'Combe et de Ronchamp.	XXV	145 à 151	Boisage des travaux souterrains. Exemples divers.
VI	40 à 41	Exemples divers de gisements. — Filons de Przibram (Bohême).	XXVI	152 à 159	D°. — Boisage des galeries en divers terrains.
VII	42	Exemples divers de gisements. — Filons de l'Erzgebirge (environs de Freiberg).	XXVII	160 à 169	Boisage et muraillement des travaux souterrains. Boisage des puits. — Muraillement des galeries.
VIII	43 à 47	Exemples divers de gisements. — Filons de Fowey Consols (Cornouailles). — Amas de Monchanin, de Stahlberg, de Saint-Pancré. — Théorie des puits artésiens.	XXVIII	170 à 184	Muraillement des travaux souterrains. — Suite du muraillement des galeries, — Muraillement des puits.
IX	48 à 58	Du sondage. — Tiges et outils divers.	XXIX	185 à 190	D°. — Excavations de formes et de dimensions spéciales. — Embranchements. — Accrochages. — Chambres de machines.
X	59 à 70	D°. — D°.	XXX	191 à 193	D°. — D°. — Suite des chambres de machines. — Tunnels à grande section.
XI	71 et 91	D°. — D°.	XXXI	194 à 198	Travaux en terrains aquifères. — Cuvelage. — Procédés Triger — Procédé Guibal.
XII	92 à 100	D°. — Outils et engins divers.	XXXII	199 à 203	D°. — Suite du procédé Guibal. — Procédé Kind et Chaudron.
XIII	101	D°. — Appareils de manœuvres. — Puits de Passy.	XXXIII	204 à 208	Des méthodes d'exploitation. — Filons ordinaires. — Filons puissants.
XIV	102	D°. — D°. — Puits du boulevard de la Gare.	XXXIV	209 à 212	D°. — D°. — Filons puissants et amas.
XV	103	D°. — D°. — Puits de la Butte-aux-Cailles.	XXXV	213 à 214	D°. — Couches de houilles minces.
XVI	104	D°. — D°. — Puits de la Chapelle.	XXXVI	215 à 216	D°. — D°.
XVII	105 à 120	Outils du mineur.	XXVII	217	D°. — Couches de houille de moyenne épaisseur.
XVIII	121 à 125	Procédés spéciaux d'abatage. — Emploi du feu et de l'eau.	XXXV III	218 à 223	D°. — Suite des couches de houille de puissance moyenne. — Couches puissantes peu inclinées.
XIX	126 à 132	Exécution des travaux souterrains. — Puits, galeries, chantiers, tunnels à grand secteur.	XXXIX	224 à 229	D°. — Suite des couches puissantes peu inclinées. — Couches puissantes très-inclinées.
XX	133 à 136	Abatage par des moyens mécaniques. — Appareils Liebet, Leschot, Gay.	XL	230 à 235	D°. — Suite des couches puissantes très-inclinées. — Moyens de se procurer des remblais.

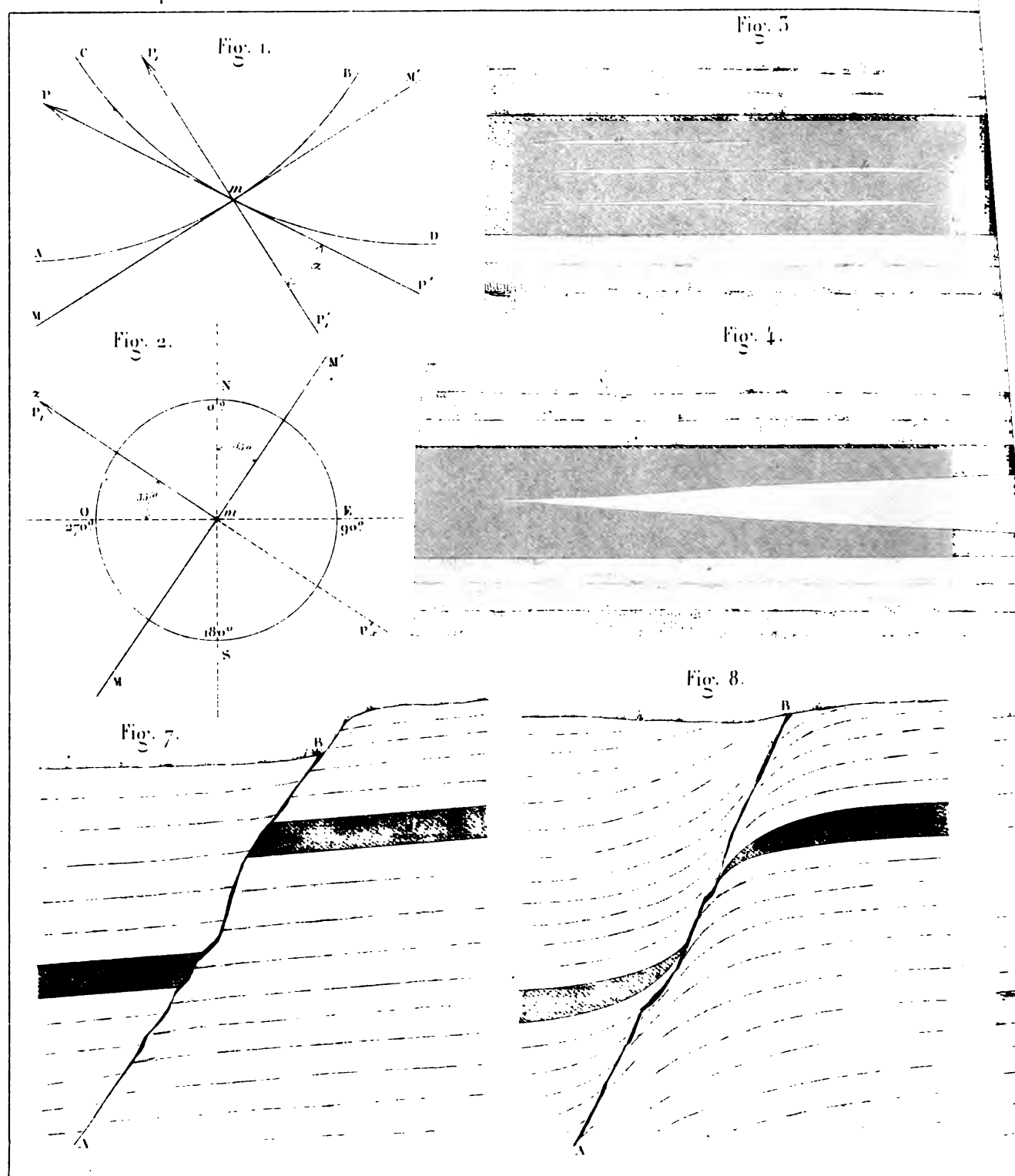


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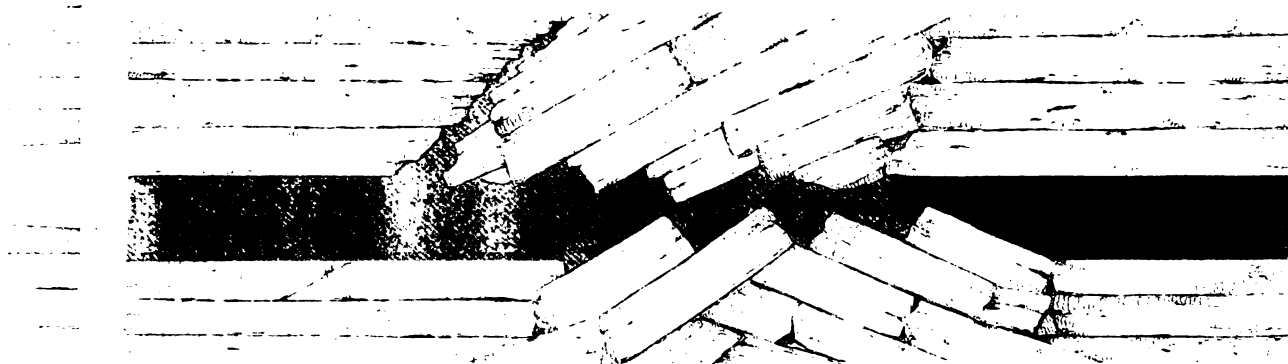


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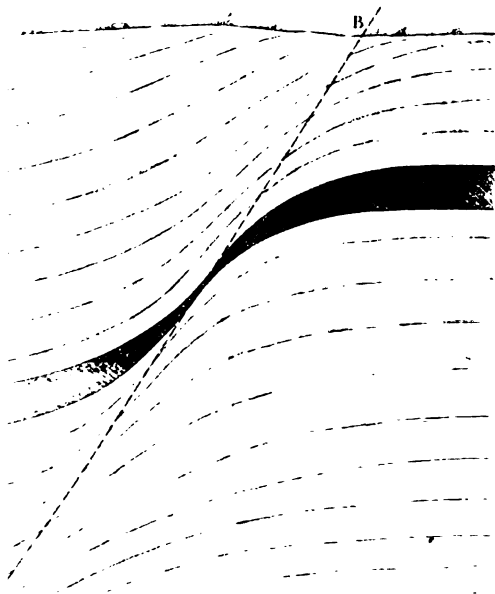
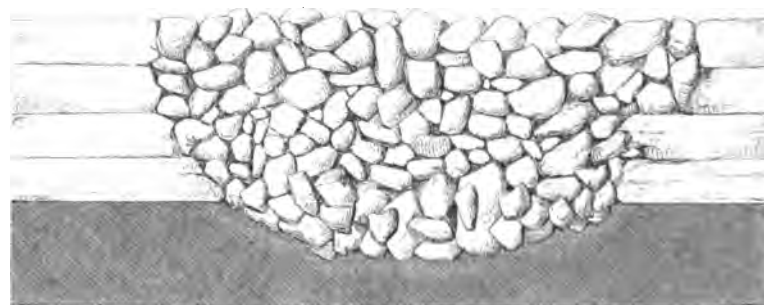


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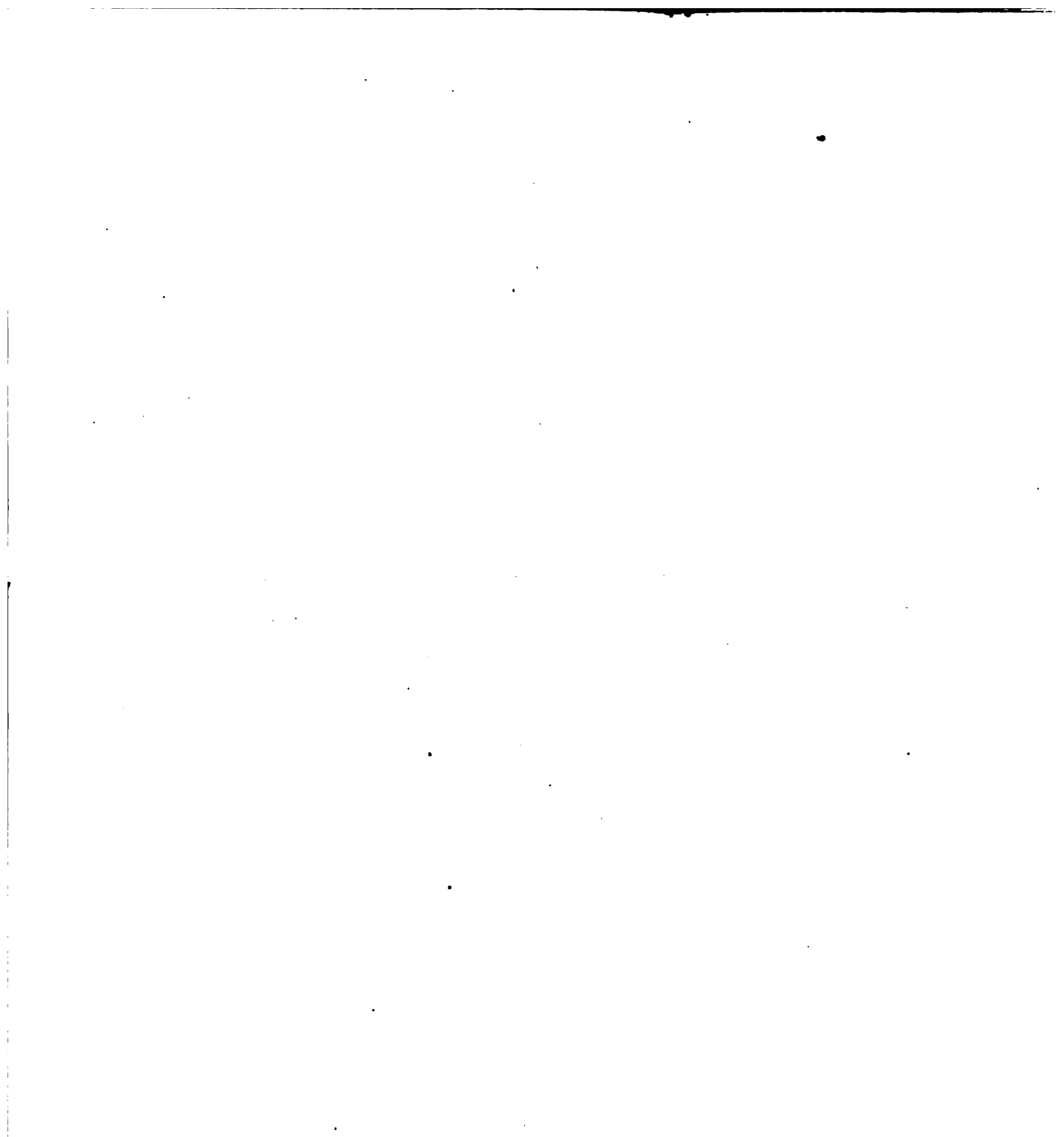
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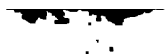
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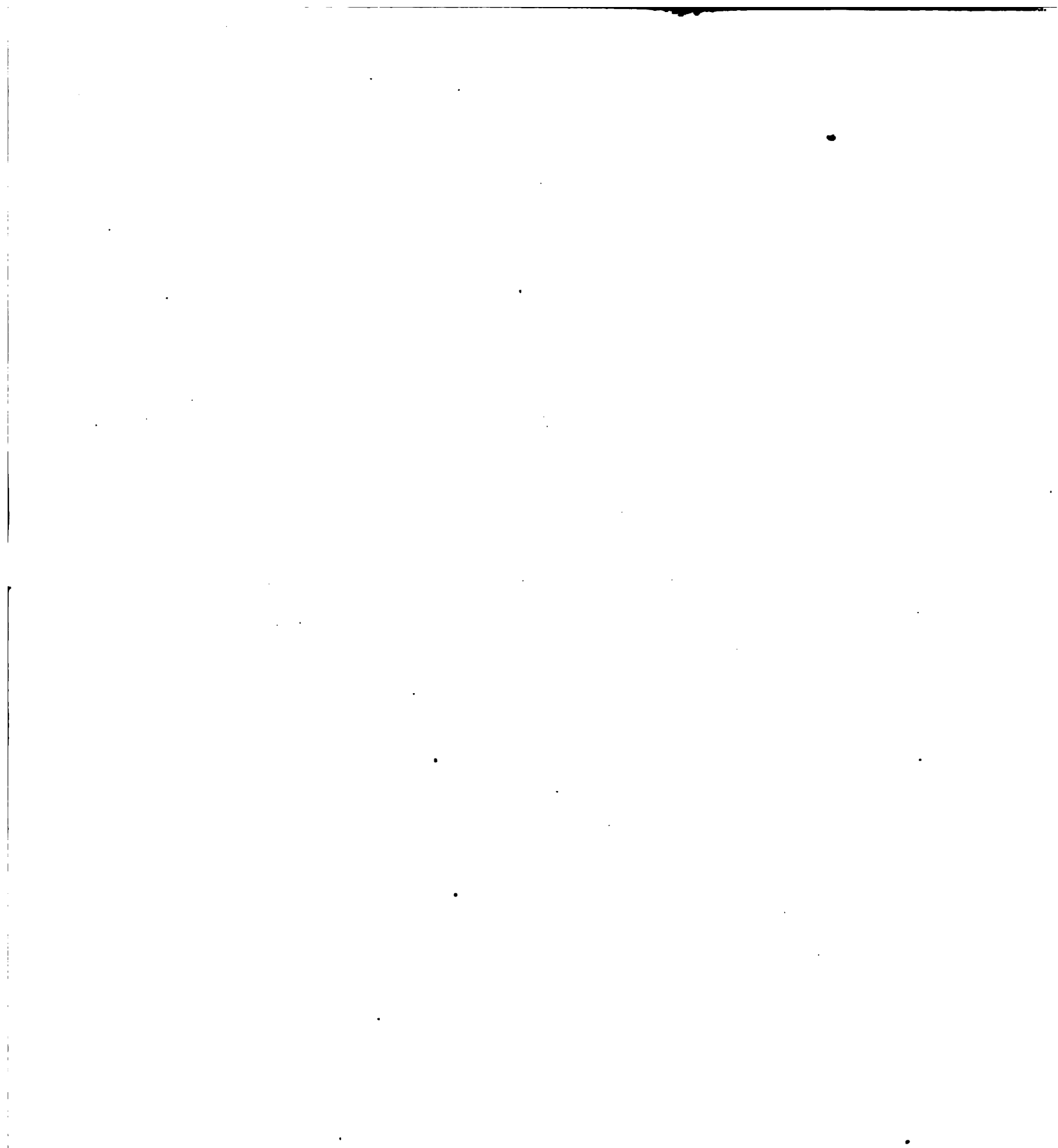


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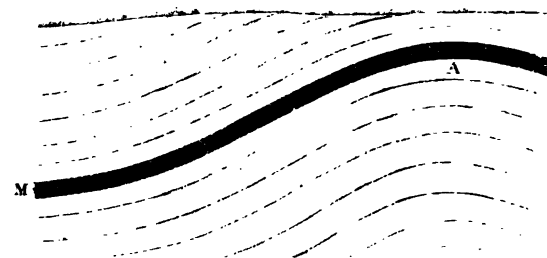


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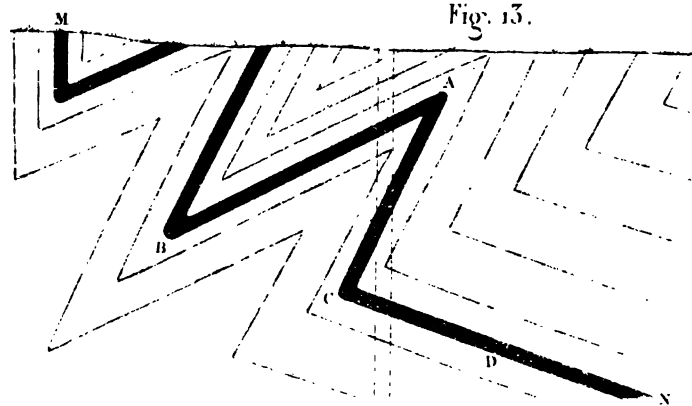


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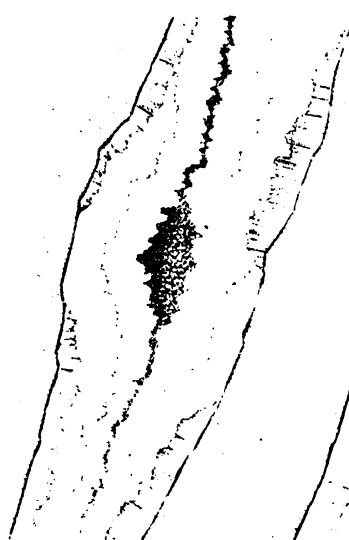


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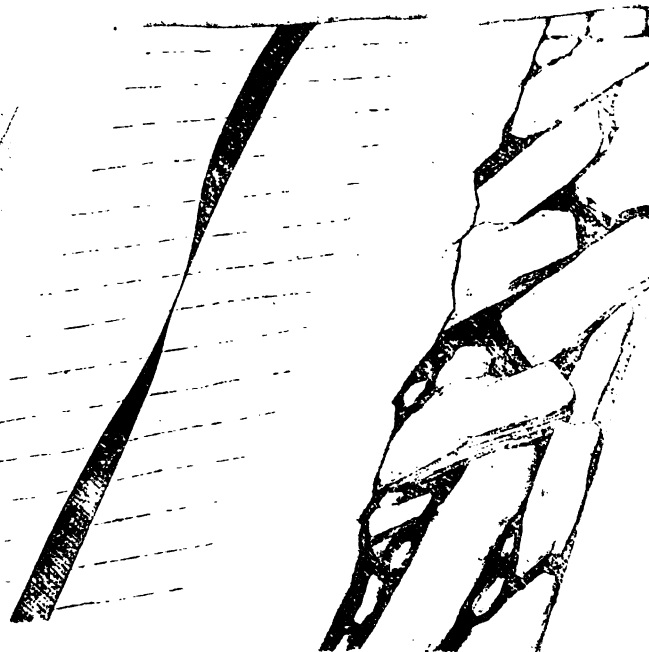


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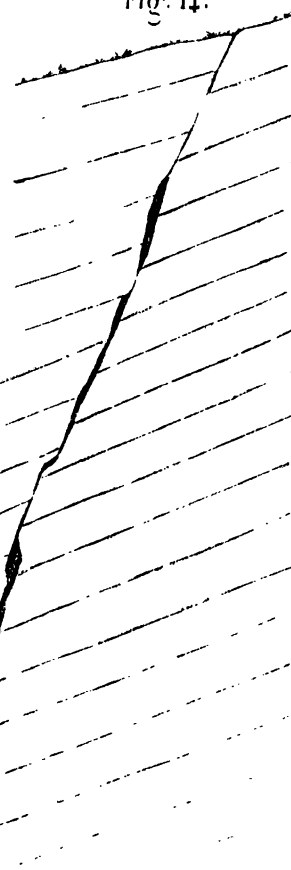


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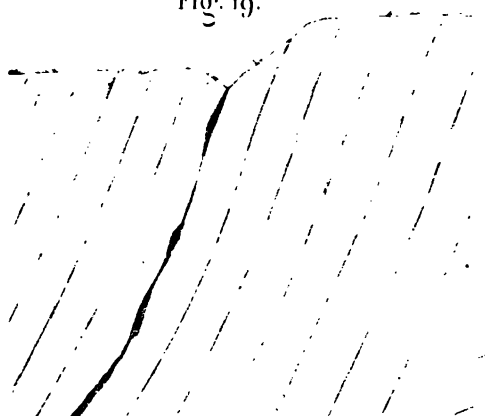


Fig. 18.



Fig. 20.

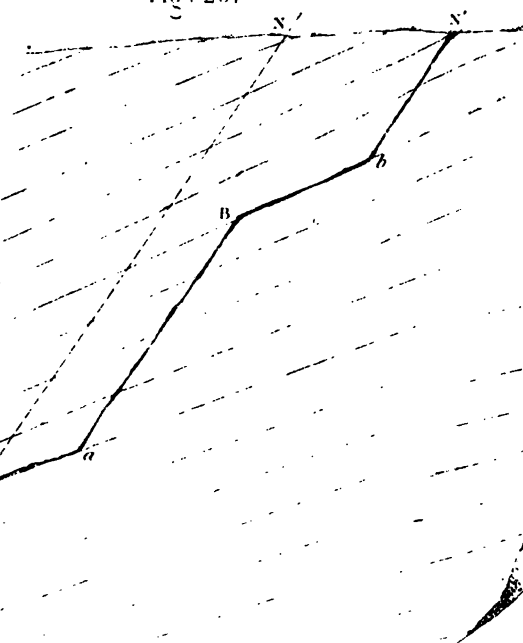
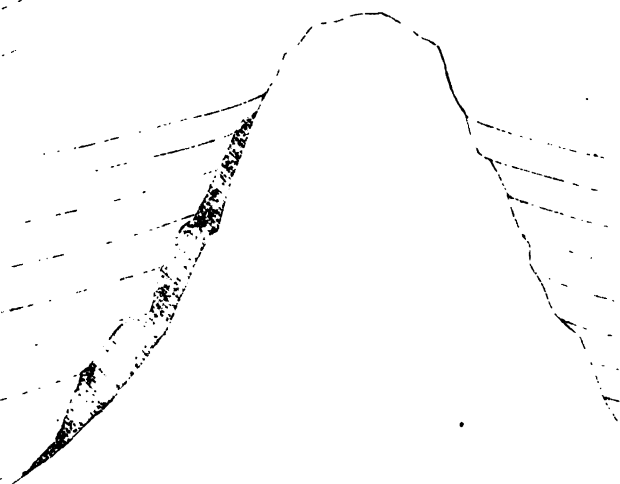
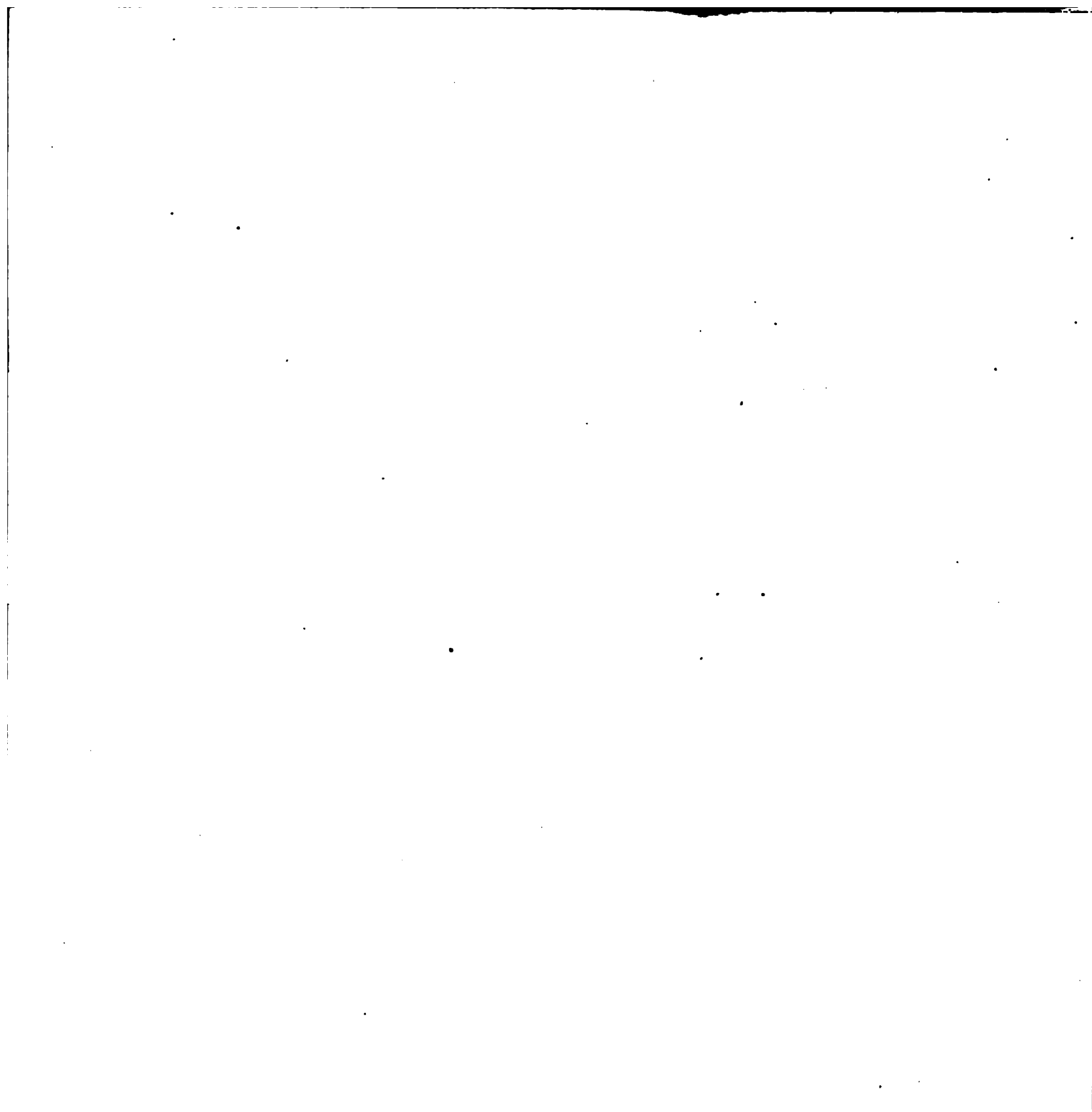


Fig. 21.





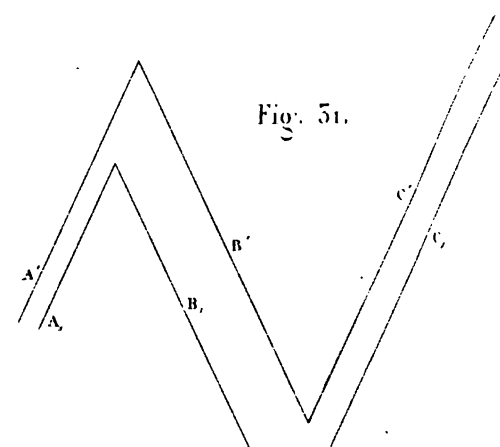
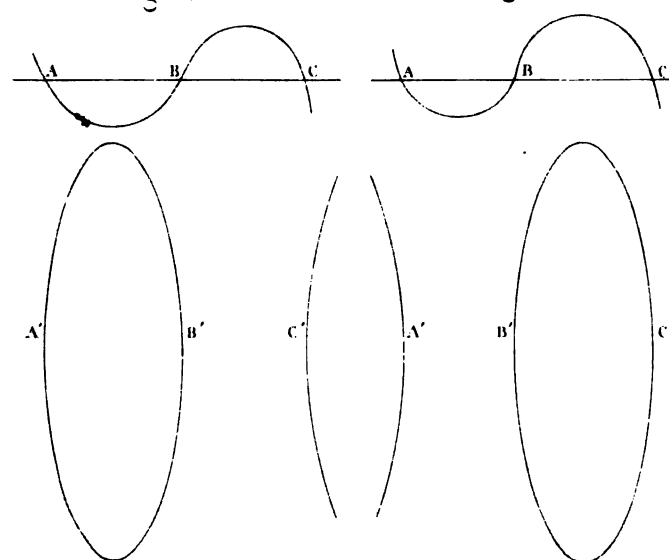
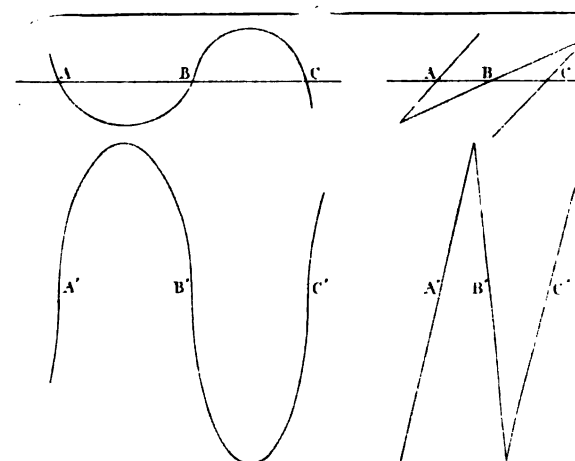
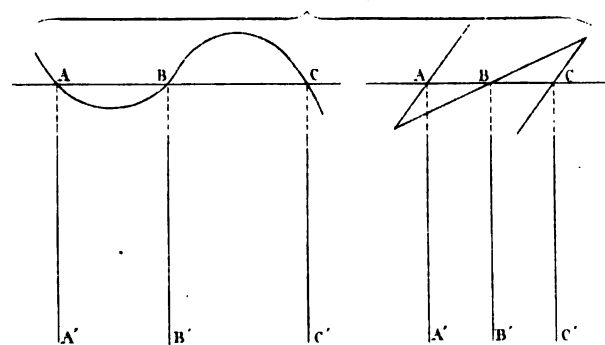
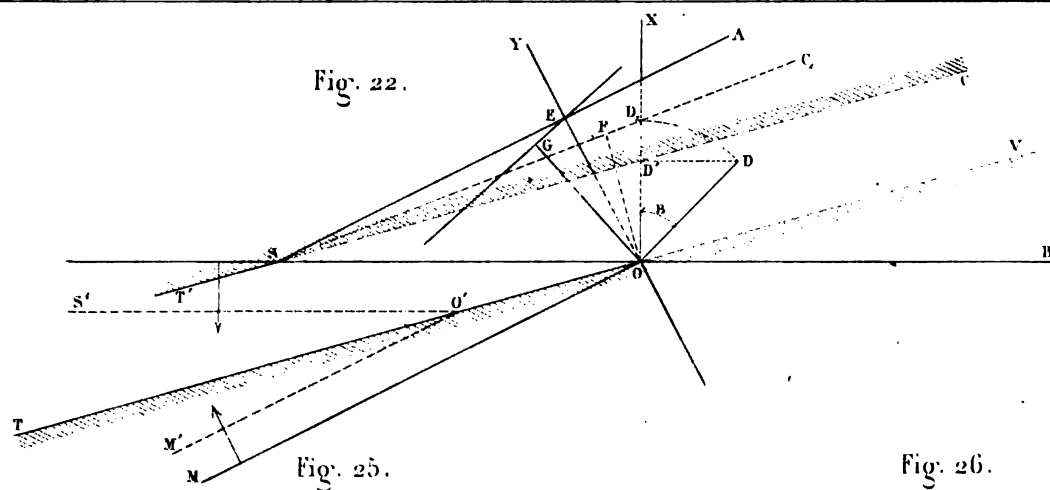


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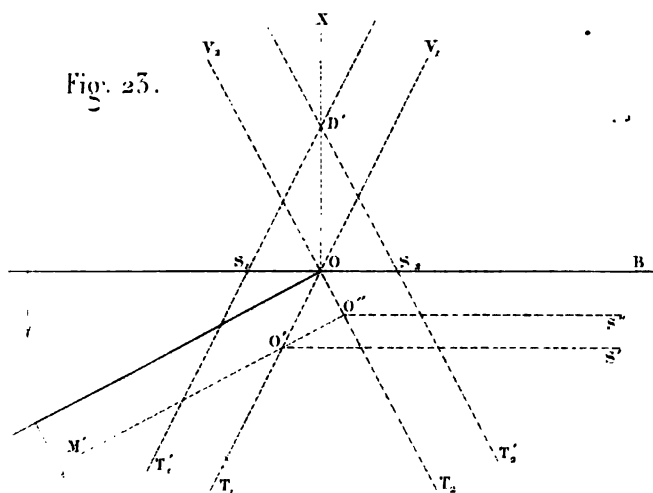


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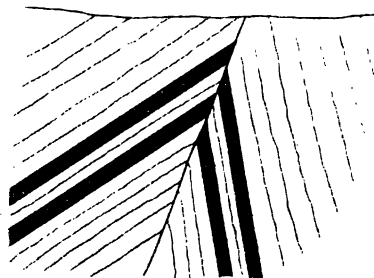


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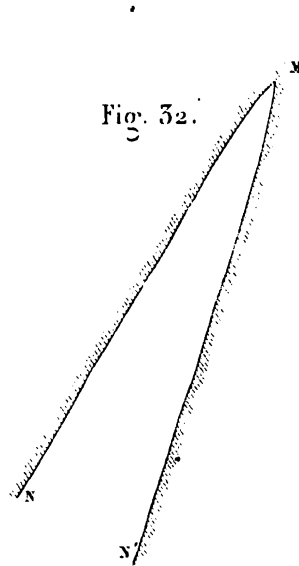


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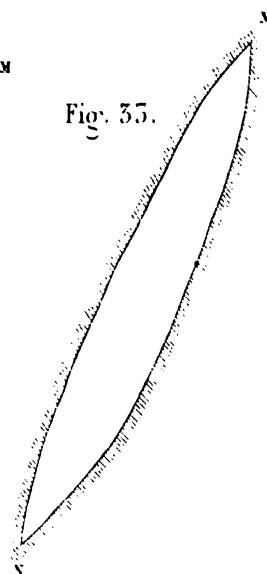


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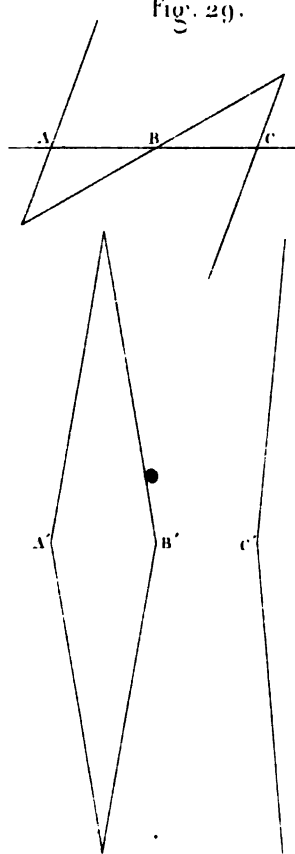


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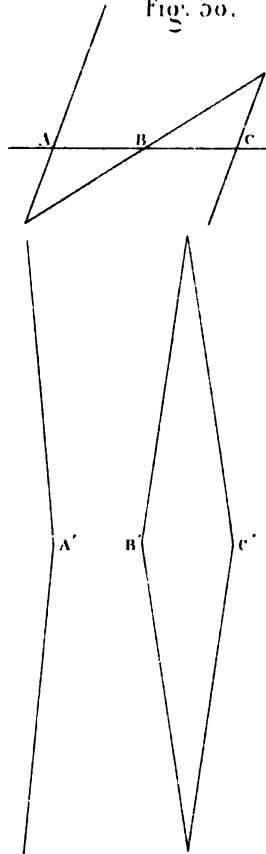
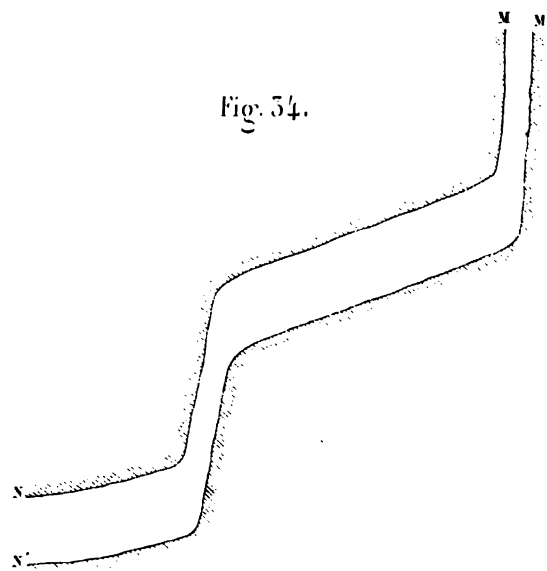


Fig. 34.



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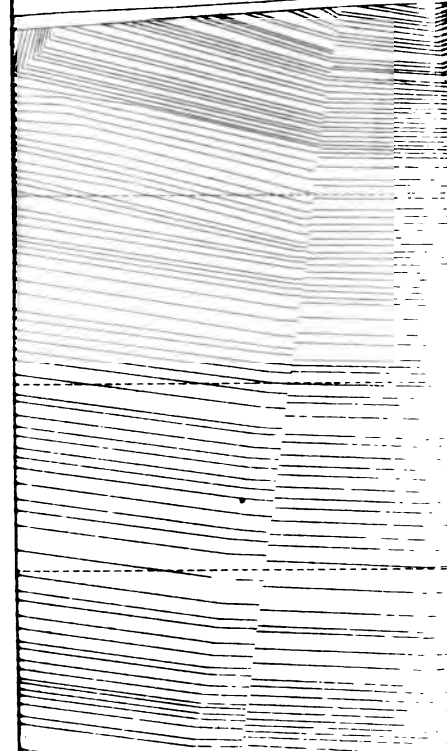
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MENTS EN COUCHES.

HOUELLER DE MONS

Fig. 35.

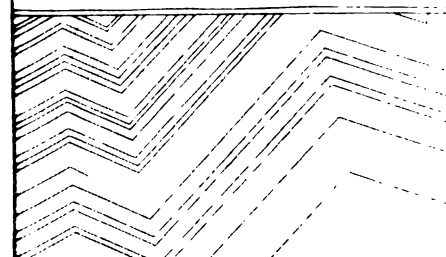
Comble du Mûli



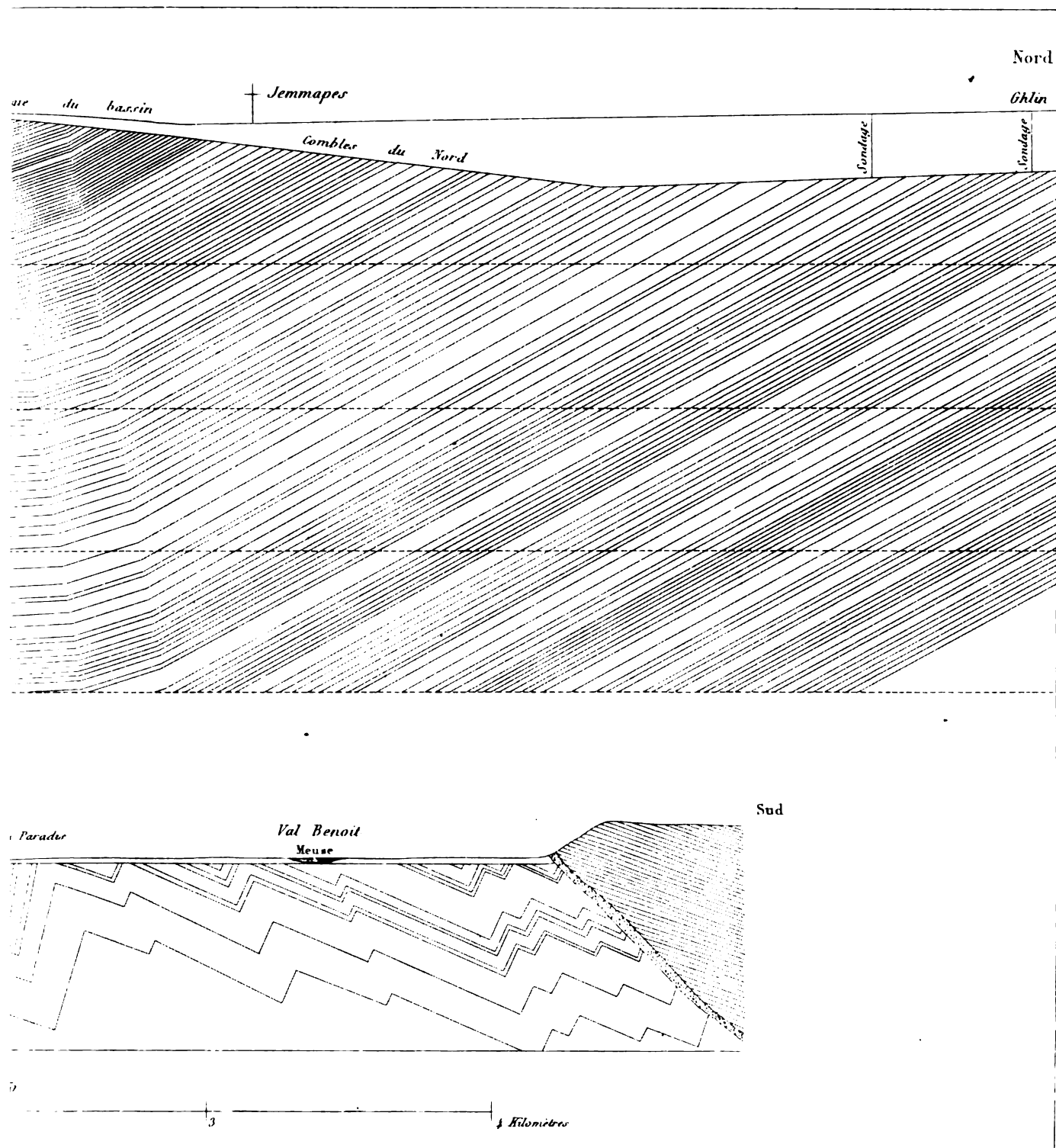
HOUELLER DE LIÈGE

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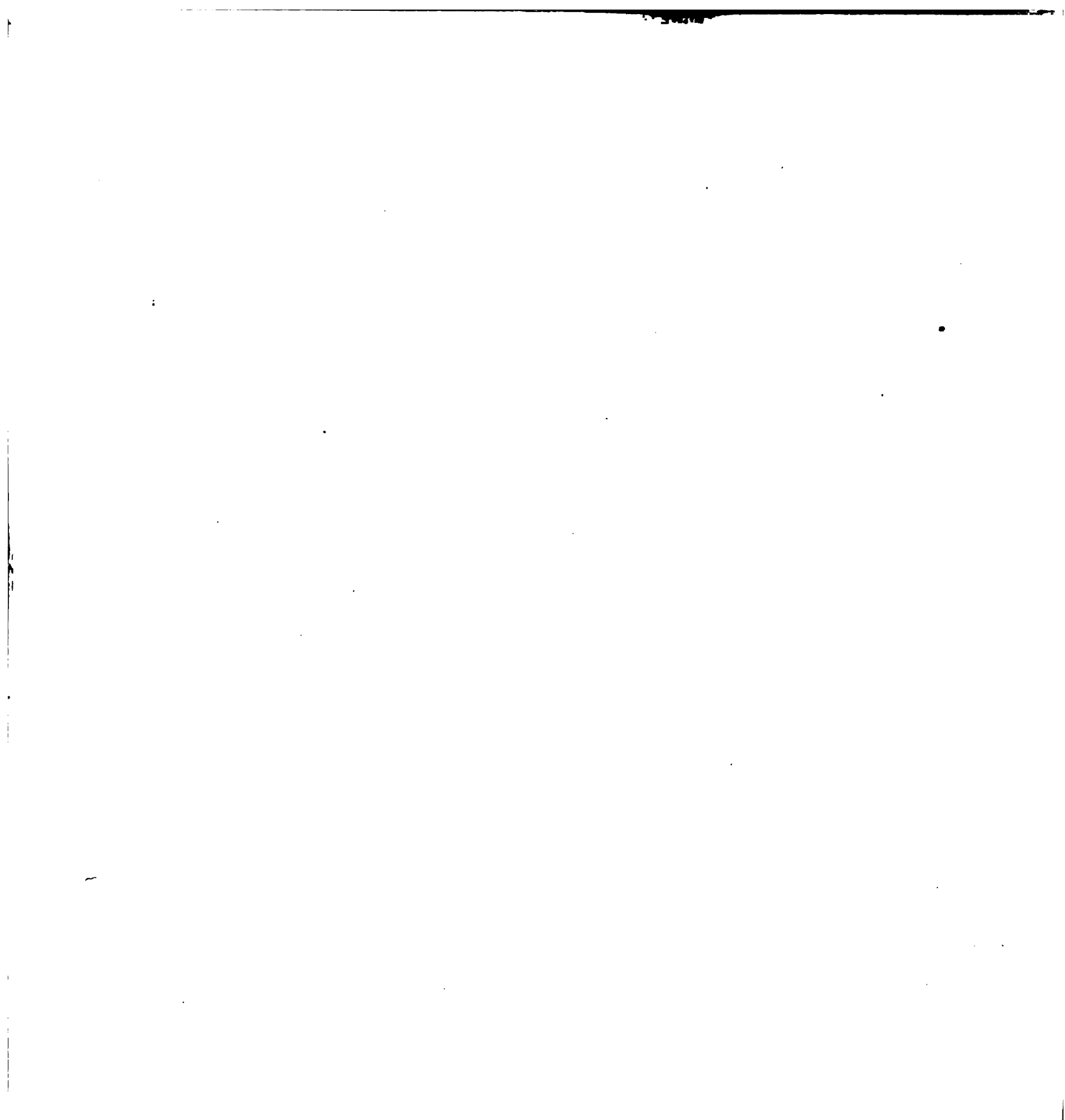
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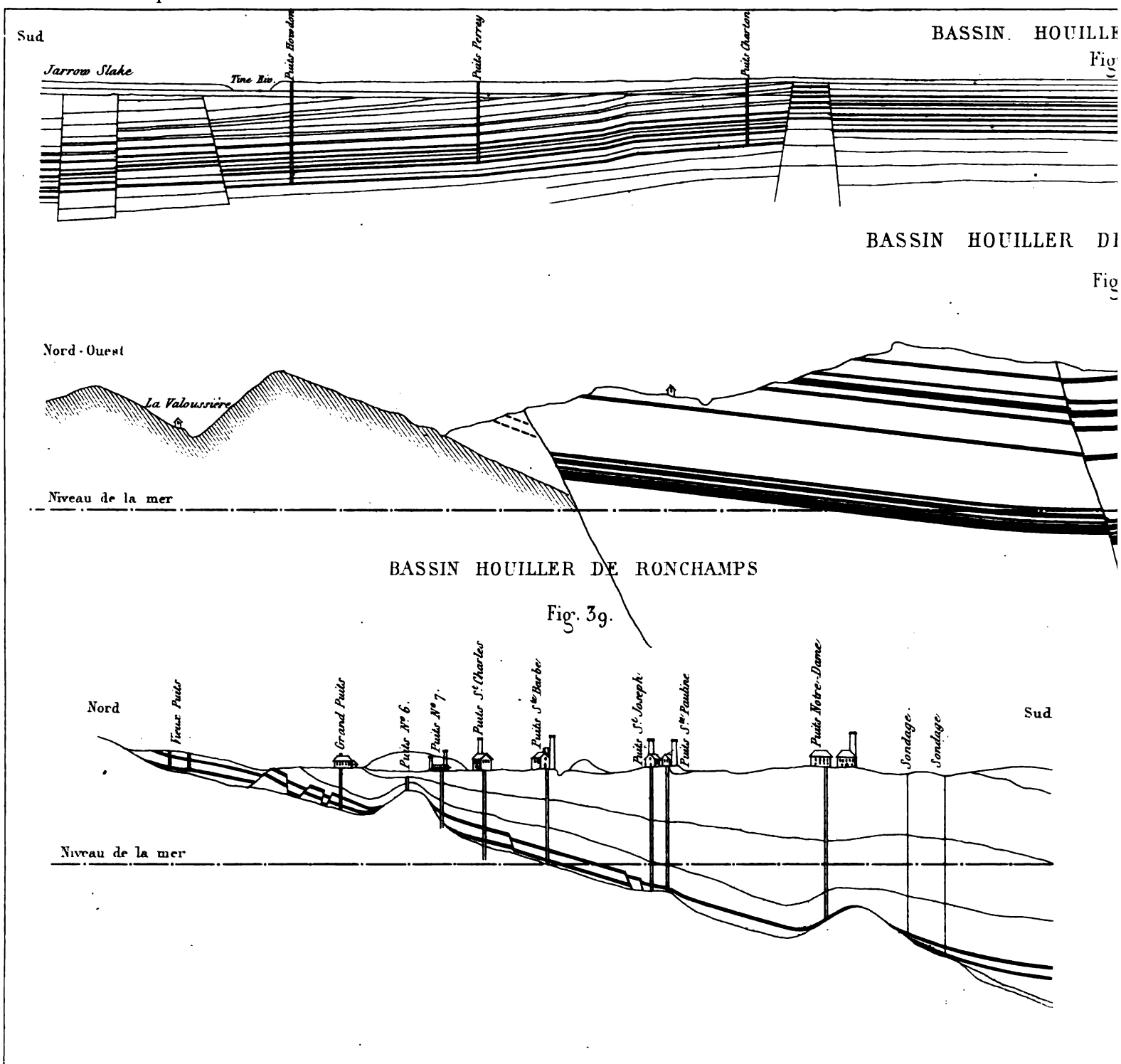


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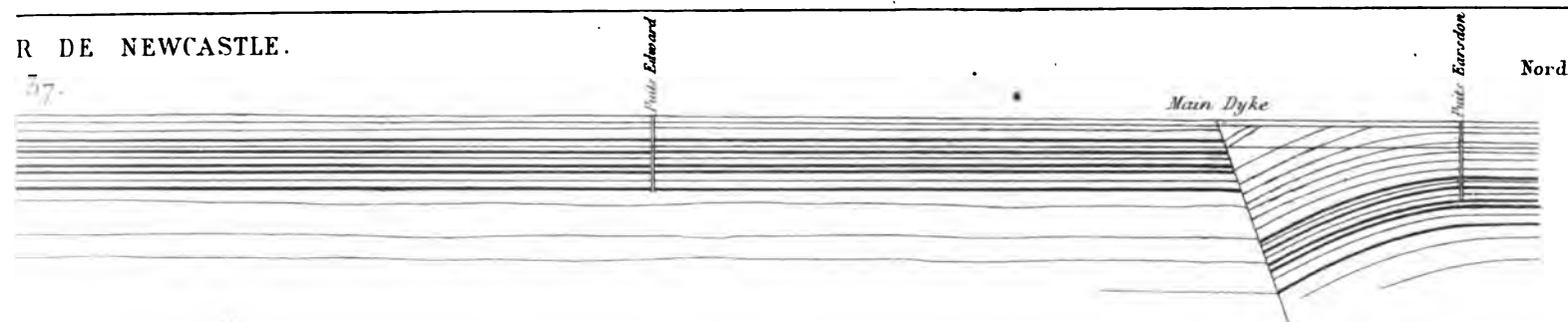


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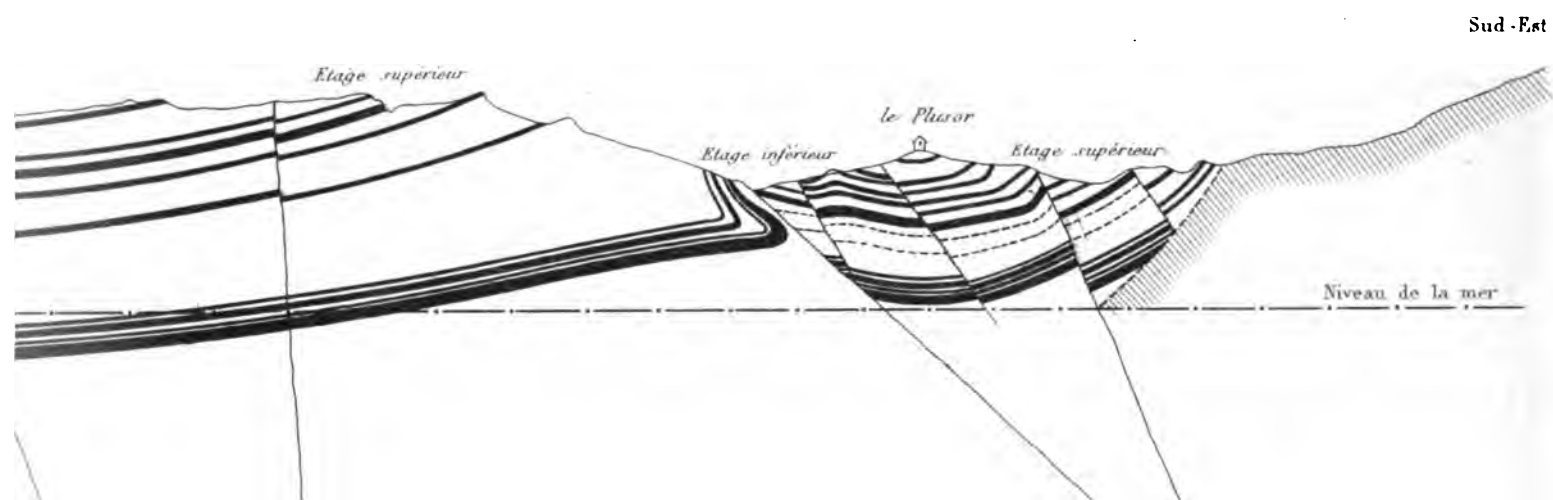


R DE NEWCASTLE.



LA GRAND COMBE.

58.



Echelle de 0^m 00005 pour 1 mètre $\frac{1}{20,000}$

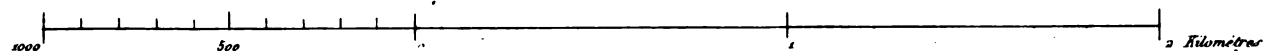
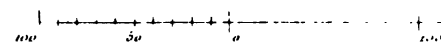
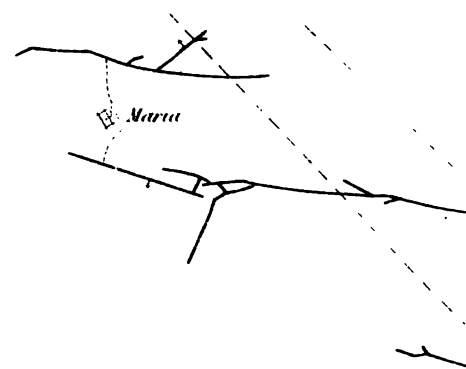




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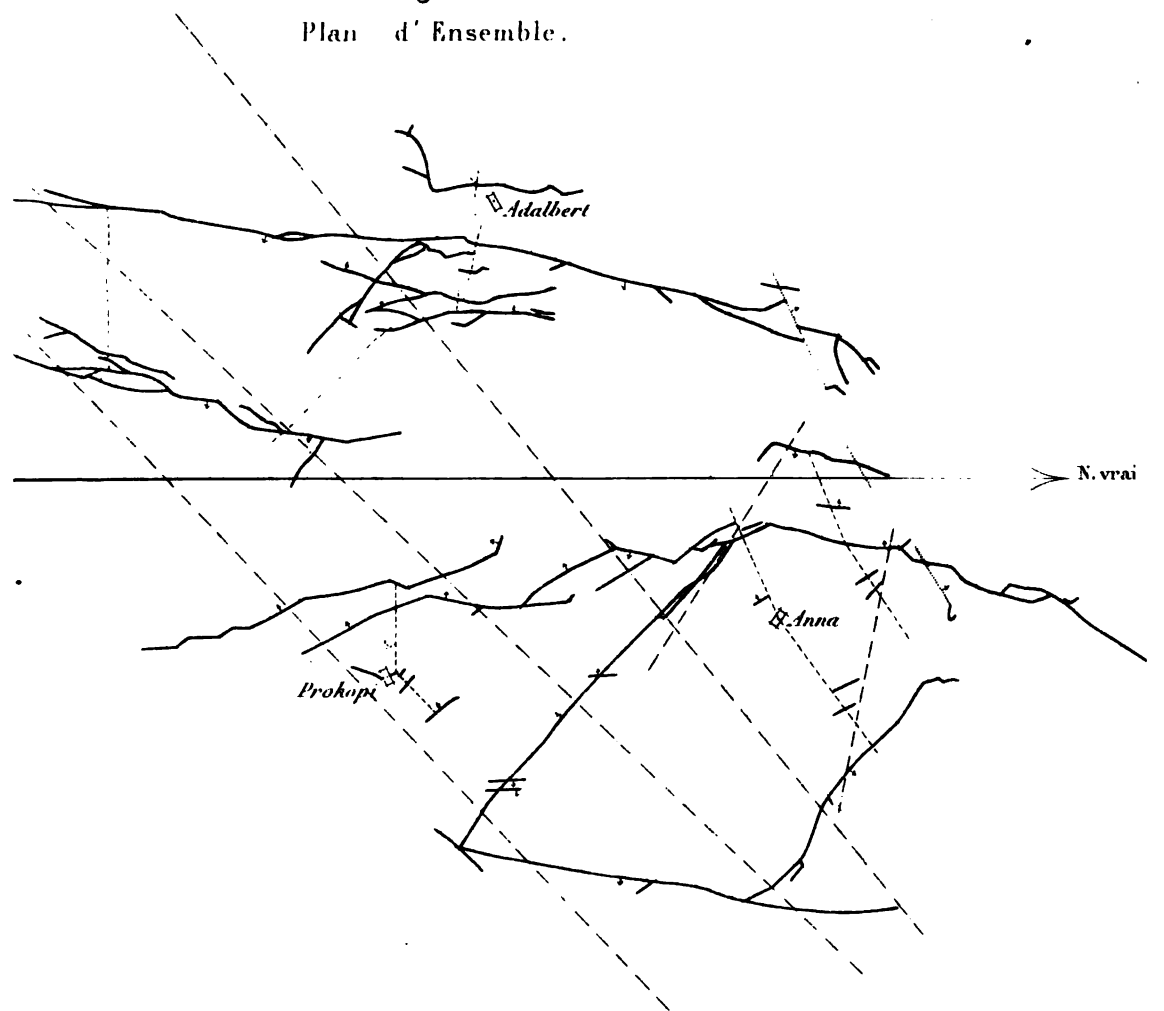
FILONS DE

Coupe verticale par le puits Adalbert

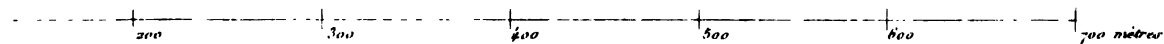


PRZIBRAM

Fig. 41.
Plan d'Ensemble.



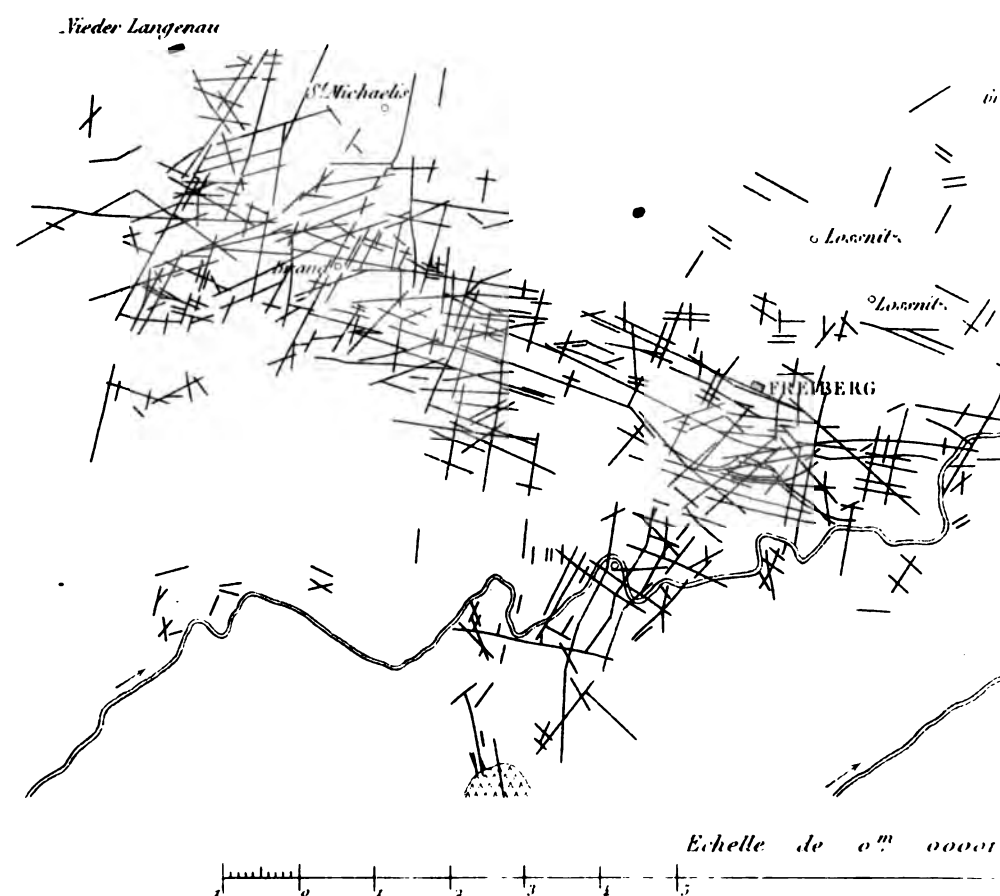
Echelle de 0^m 00025 pour 1 mètre 4.000



- Filons
- Gneiss gris
- ▨ Micascistes
- ▤ Thonschiefer
- ▥ Grauwackes
- ▧ Granite
- ▩ Grunsteins
- Porphres

FILONS DE FER

Fig. 42.



ZIBERG

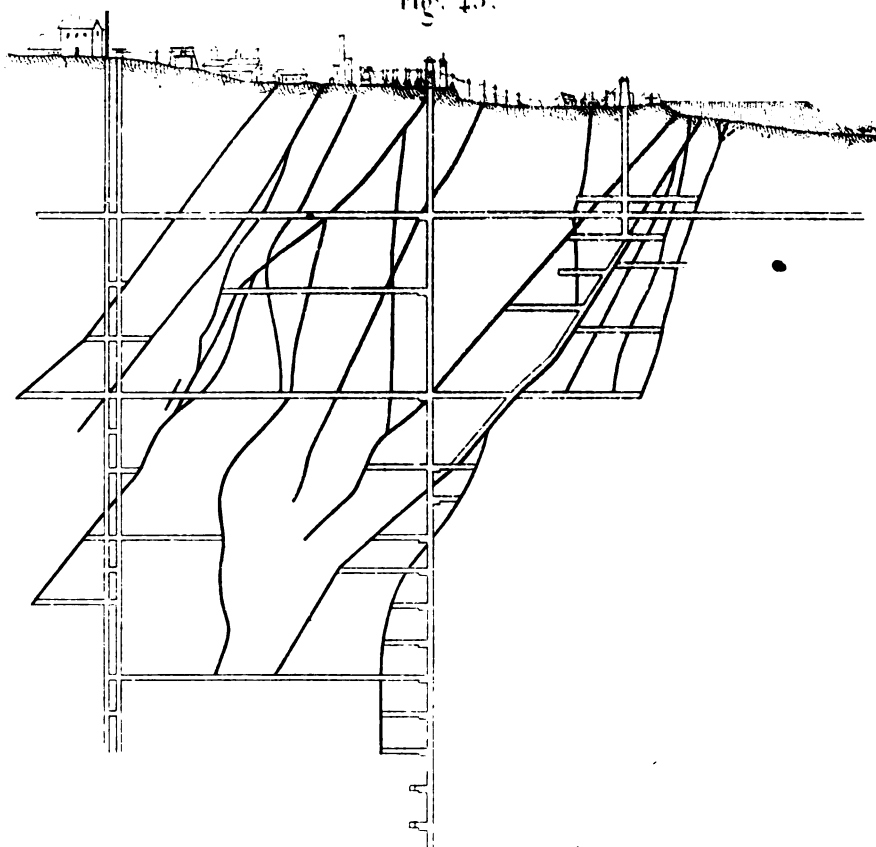


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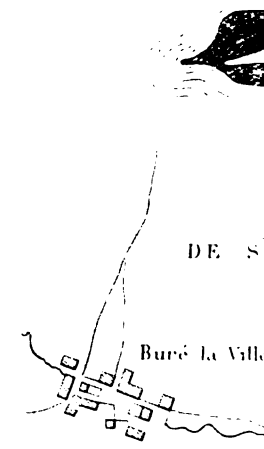
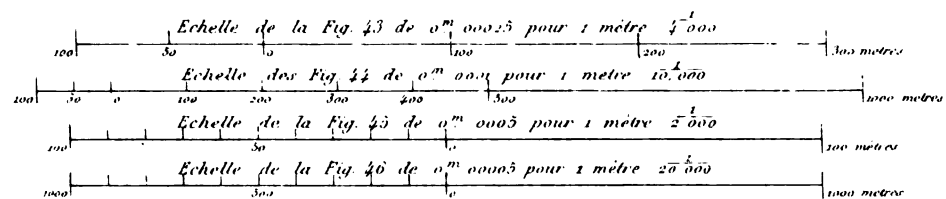
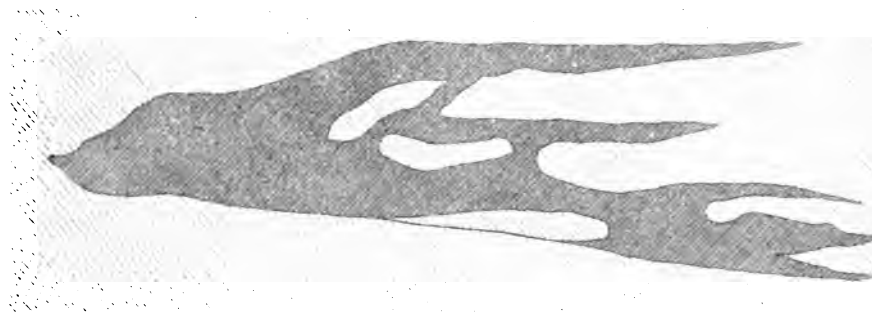
MINE DE FOWEY CONSOLS Coupe verticale.

Fig. 45.

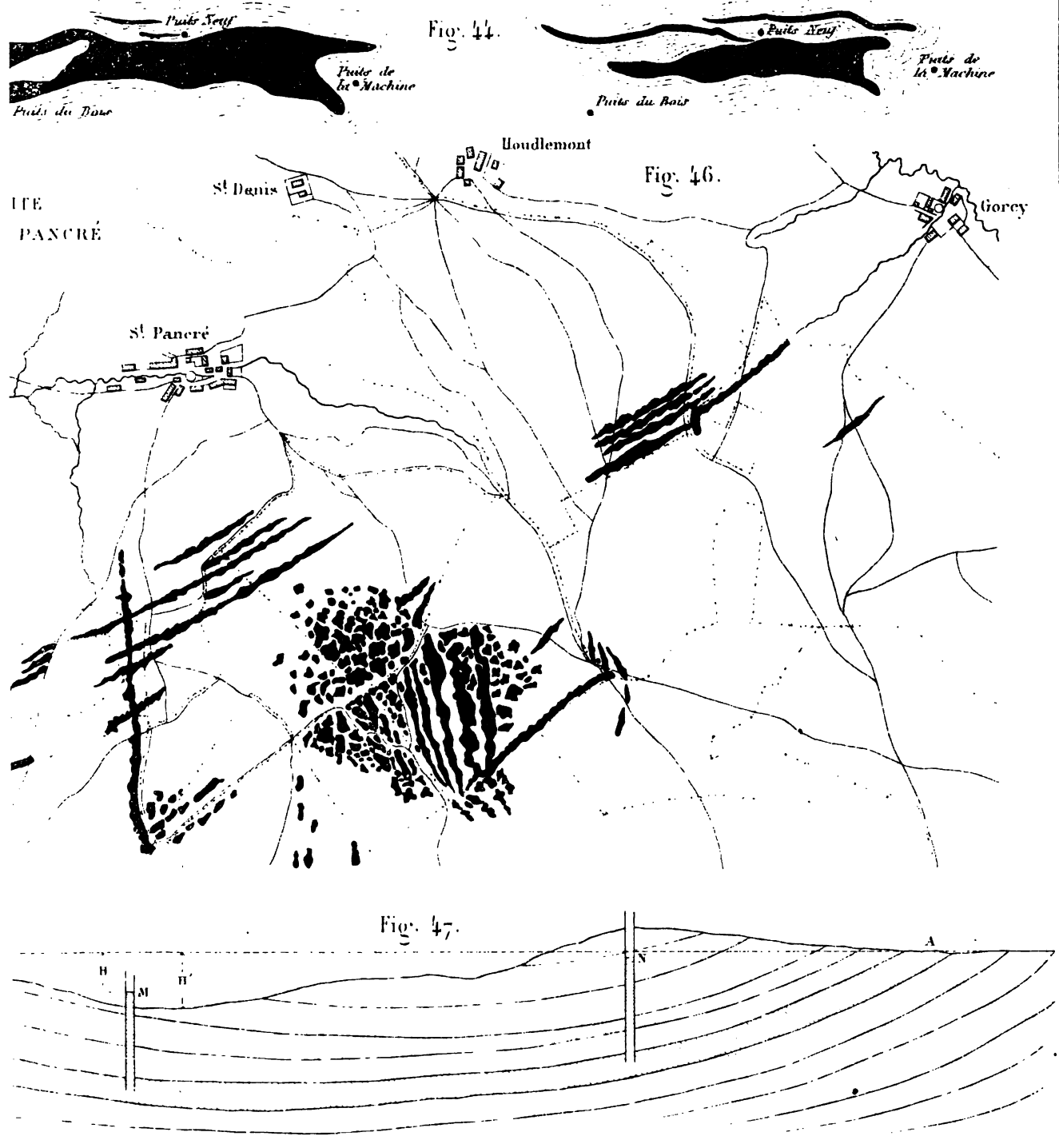


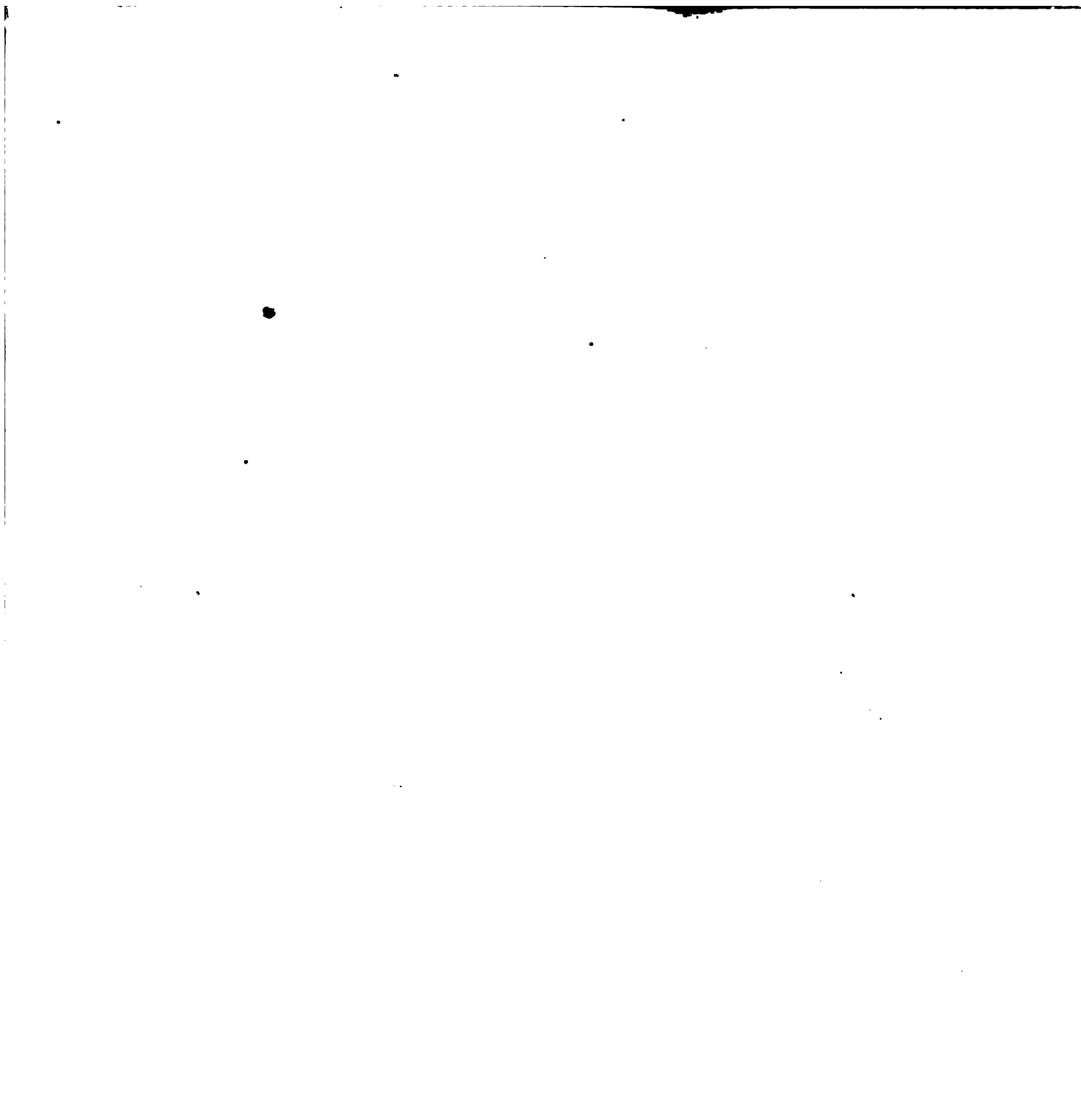
GITE DE STAHLBERG.

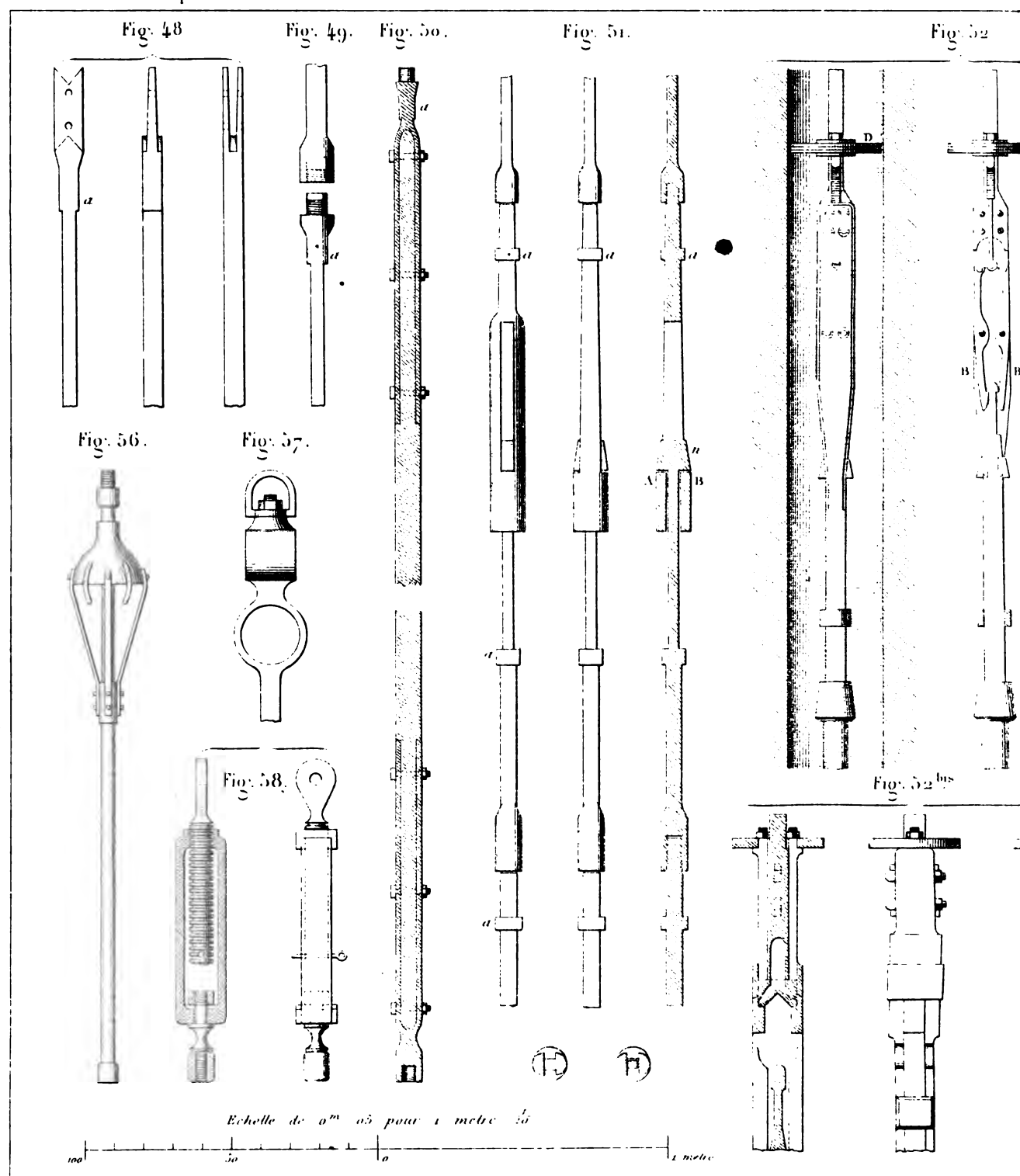
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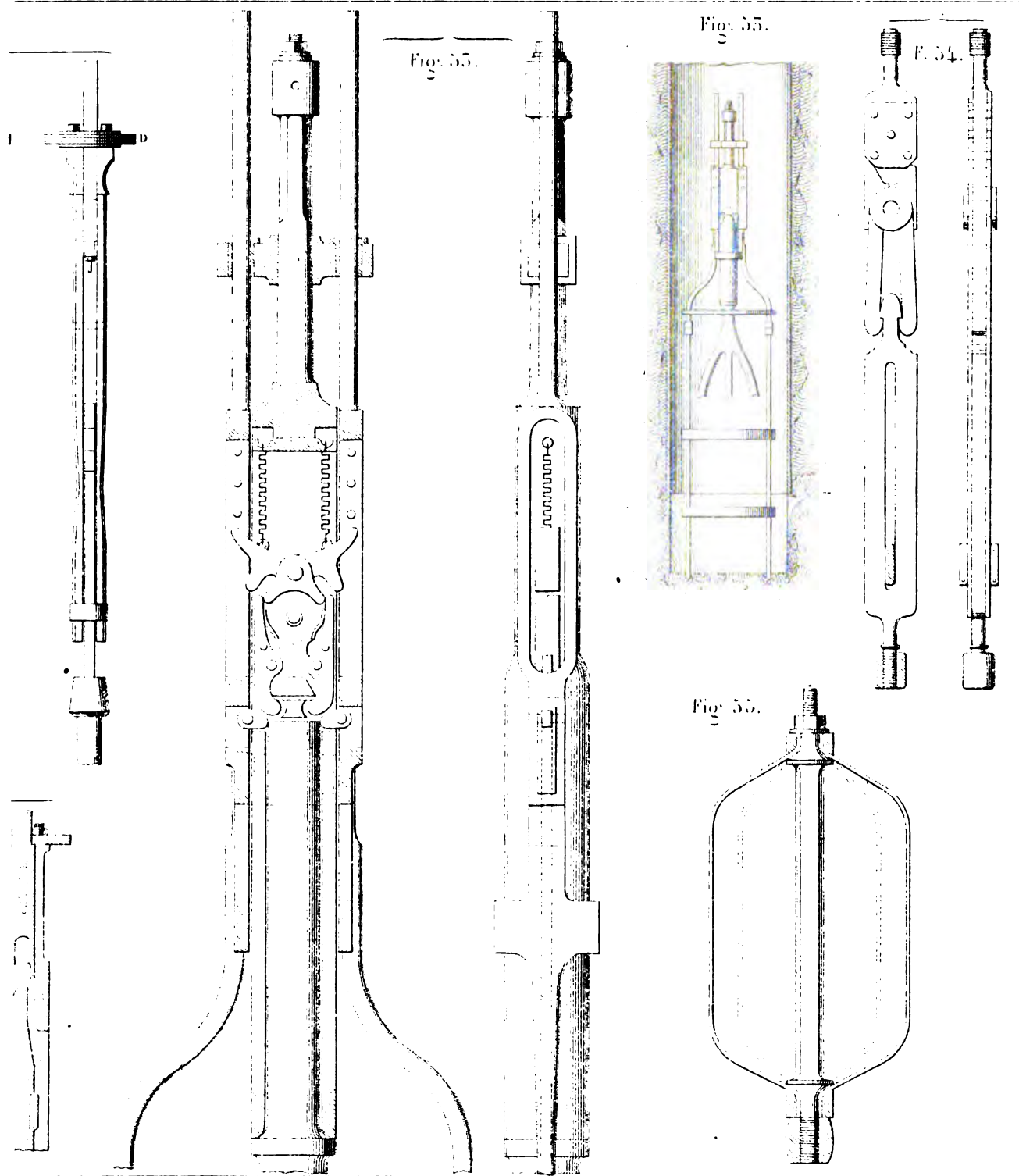


GITE DE MONTCHANIN.









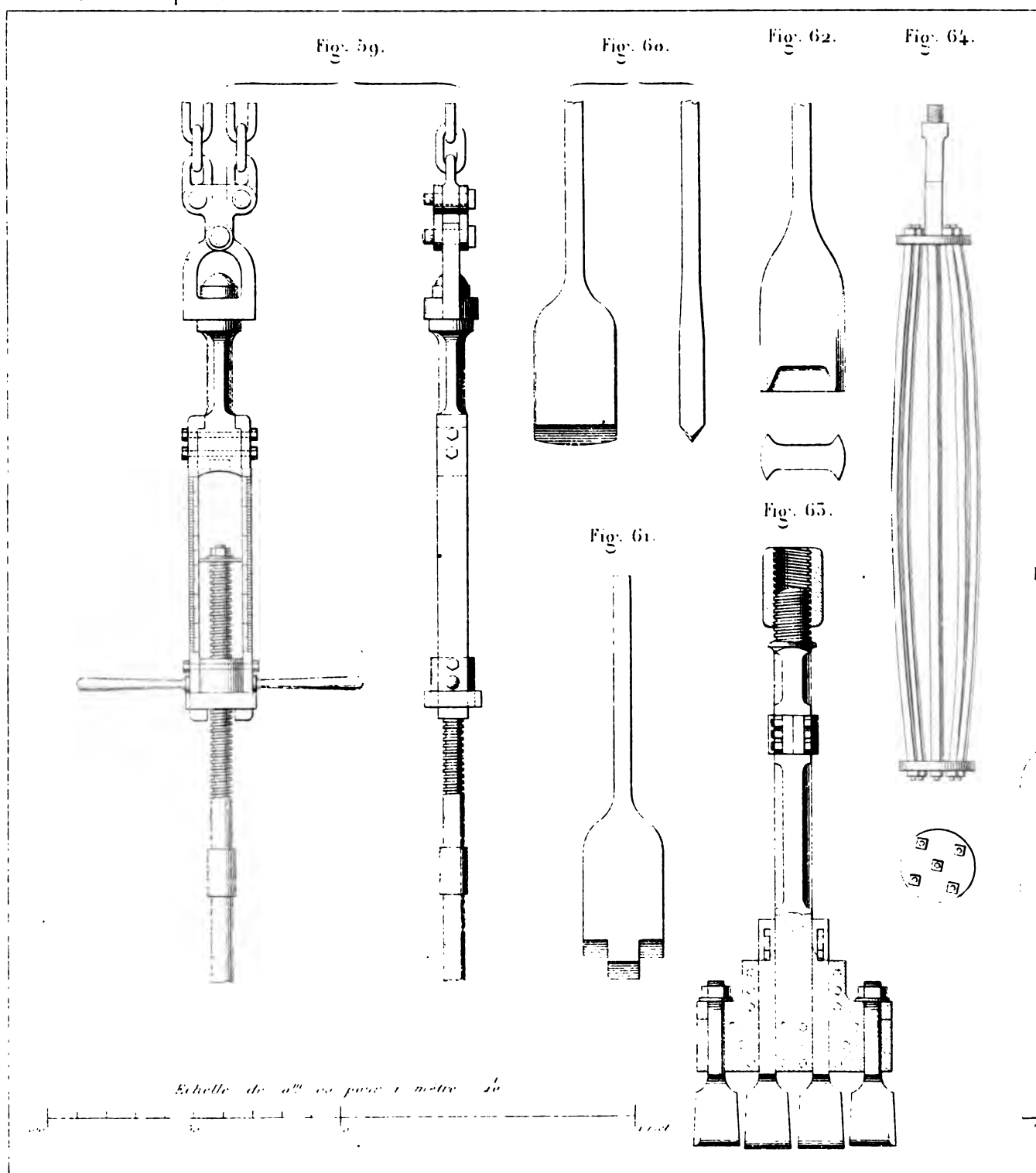


Fig. 65.

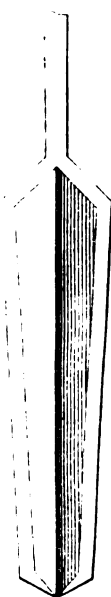


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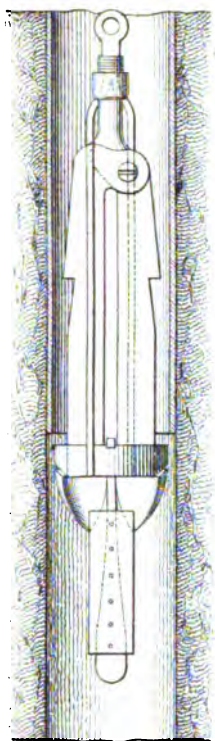


Fig. 67.

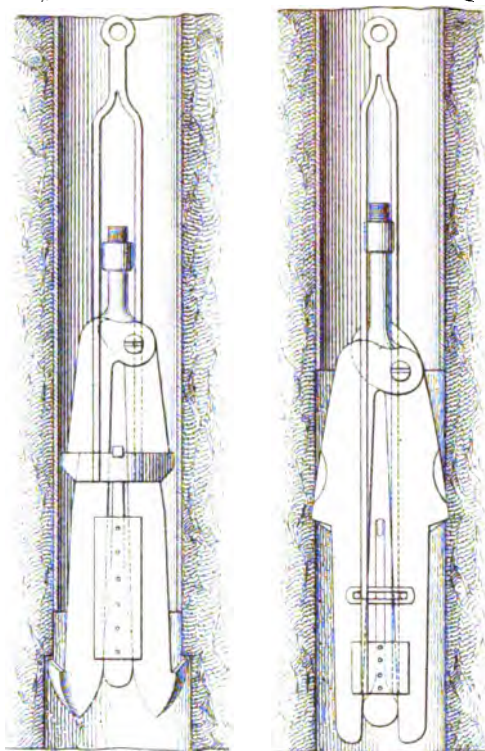


Fig. 68.

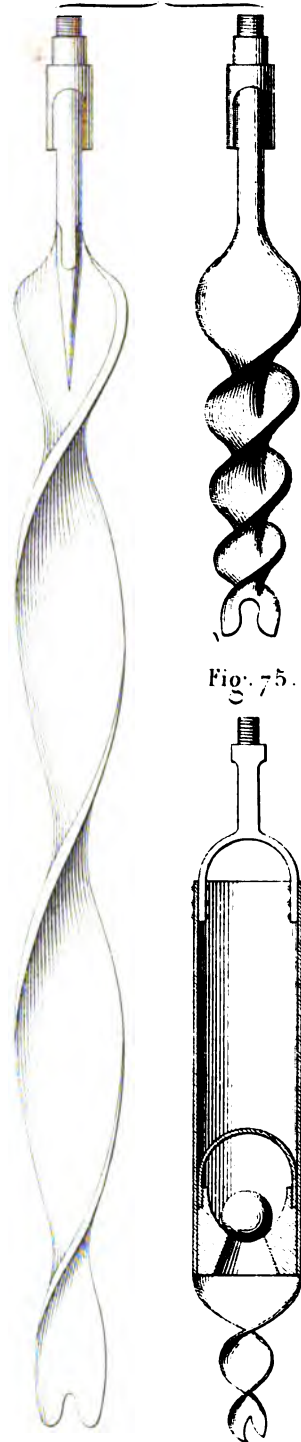


Fig. 69.



Fig. 70.



Fig. 71.

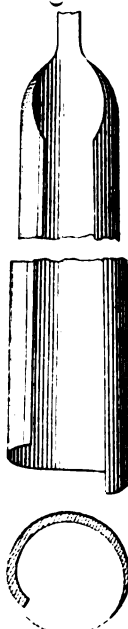


Fig. 72.



Fig. 73.

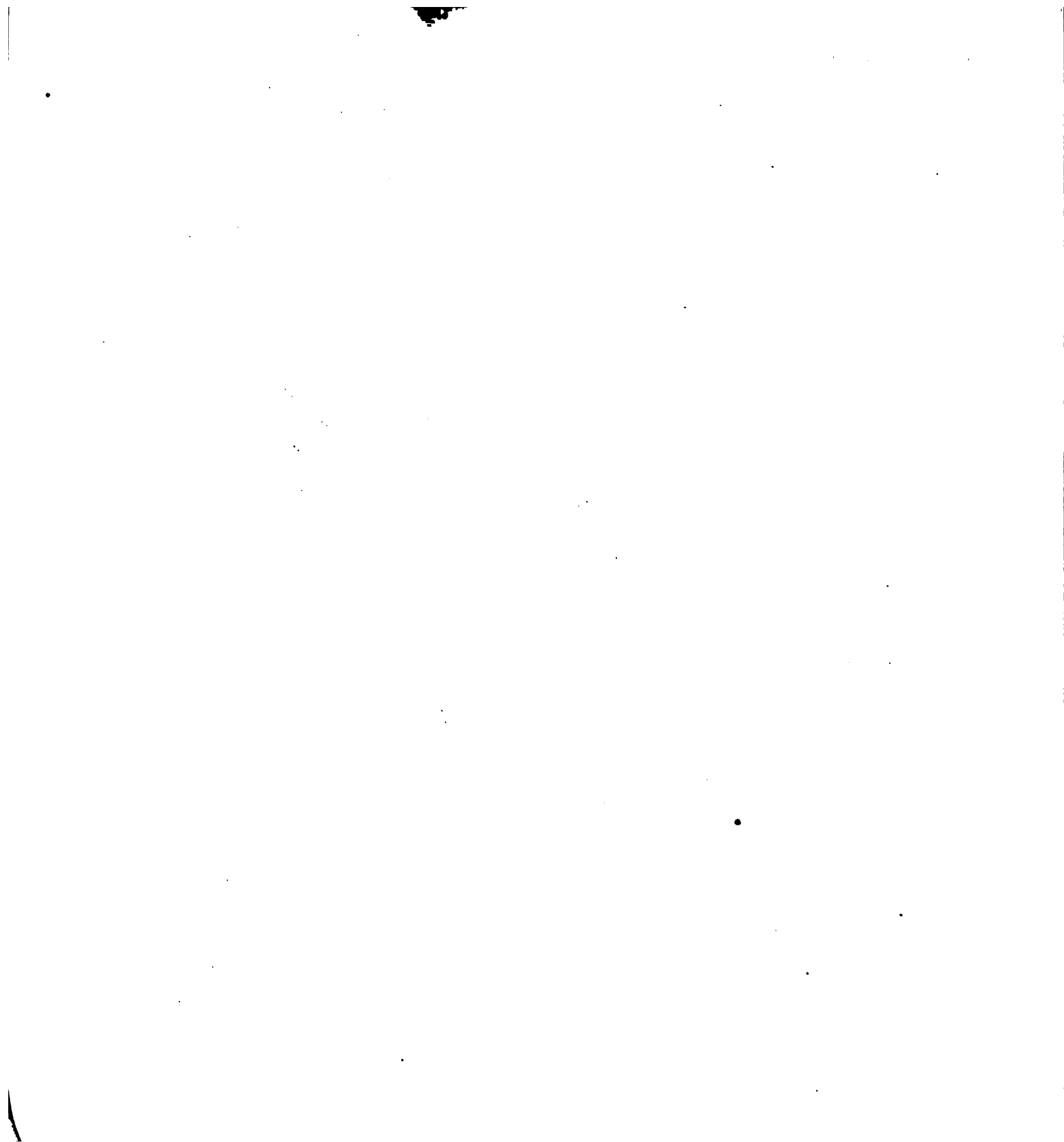


Fig. 74.



Fig. 75.





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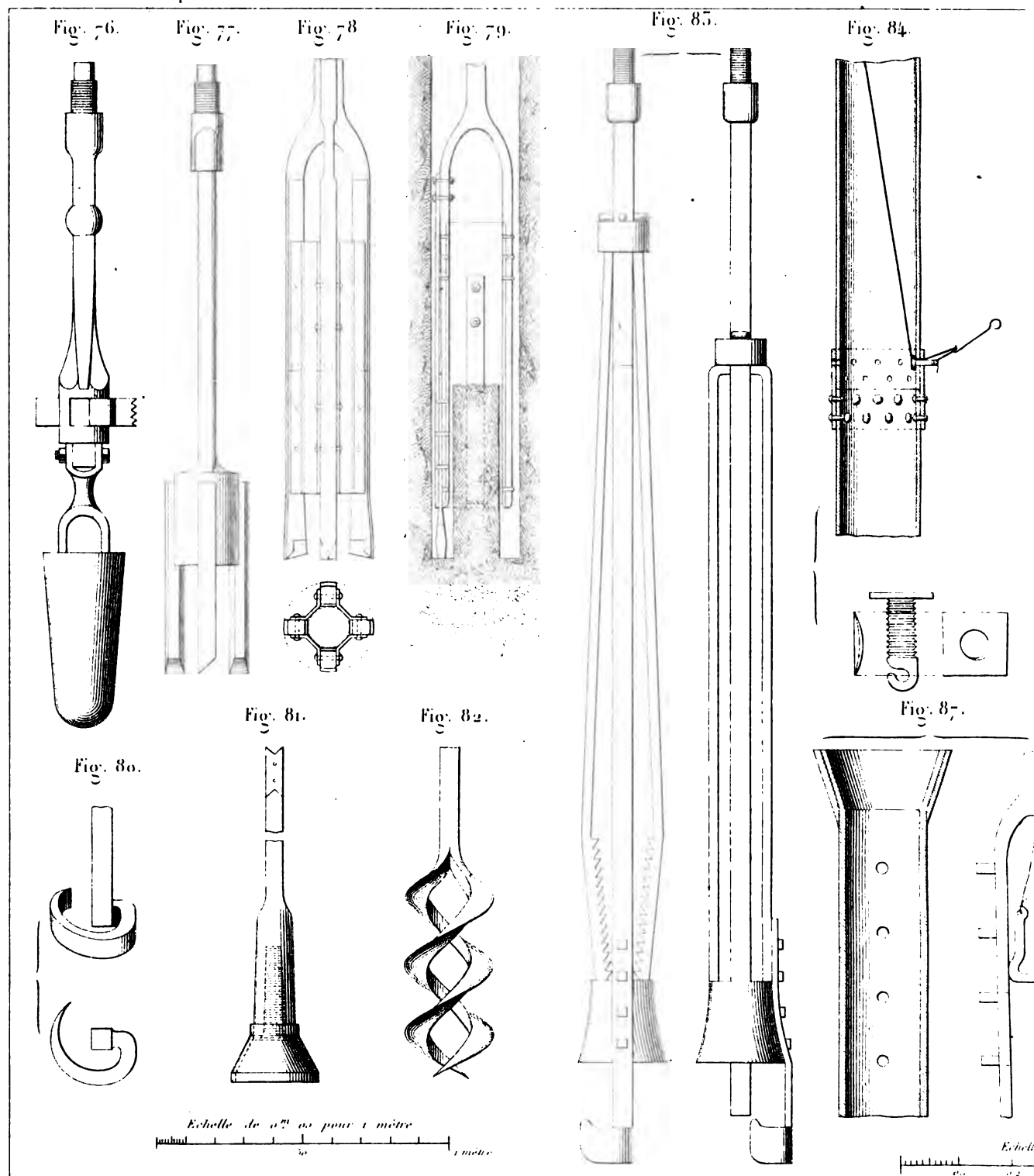
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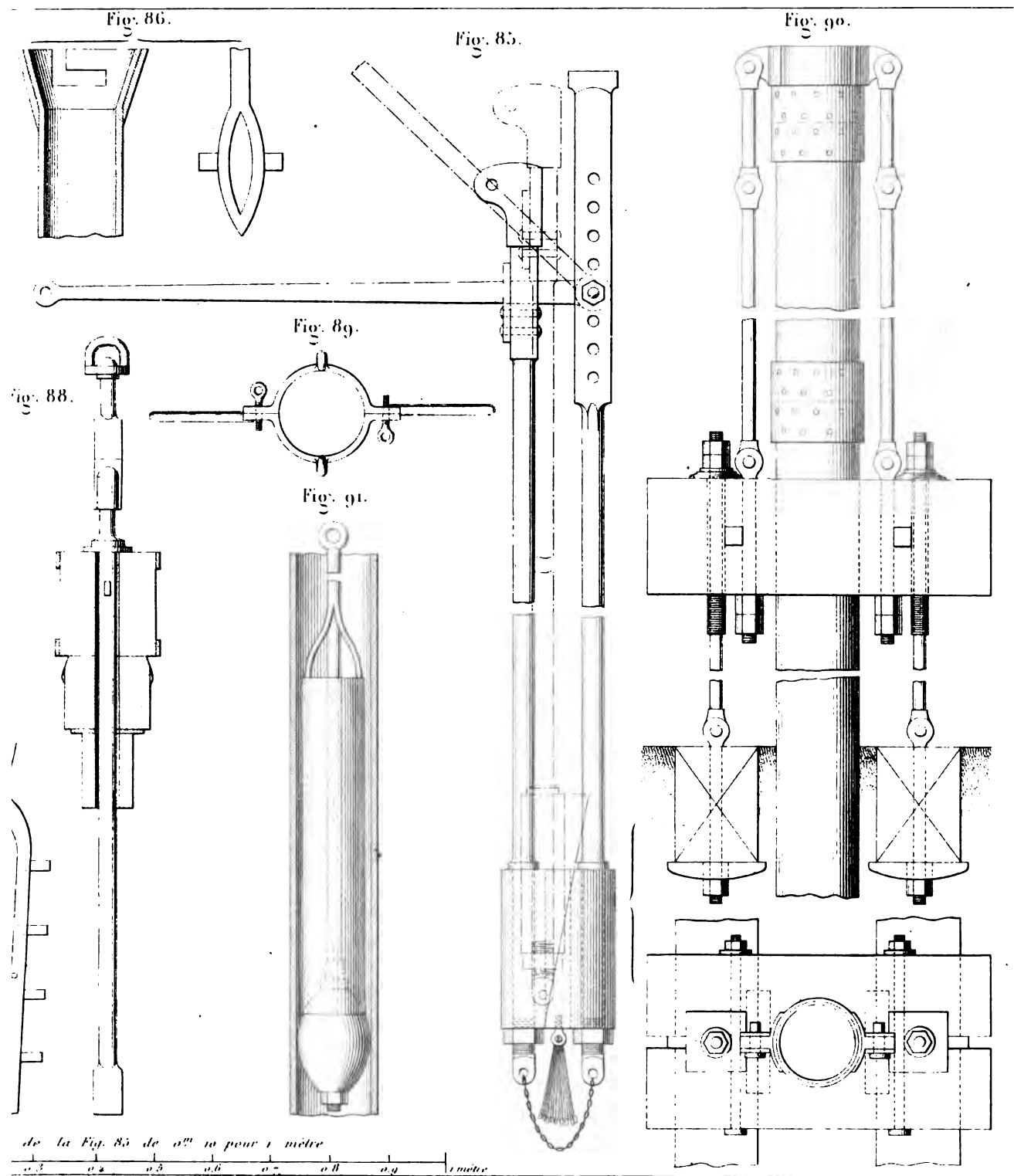


Fig. 93.

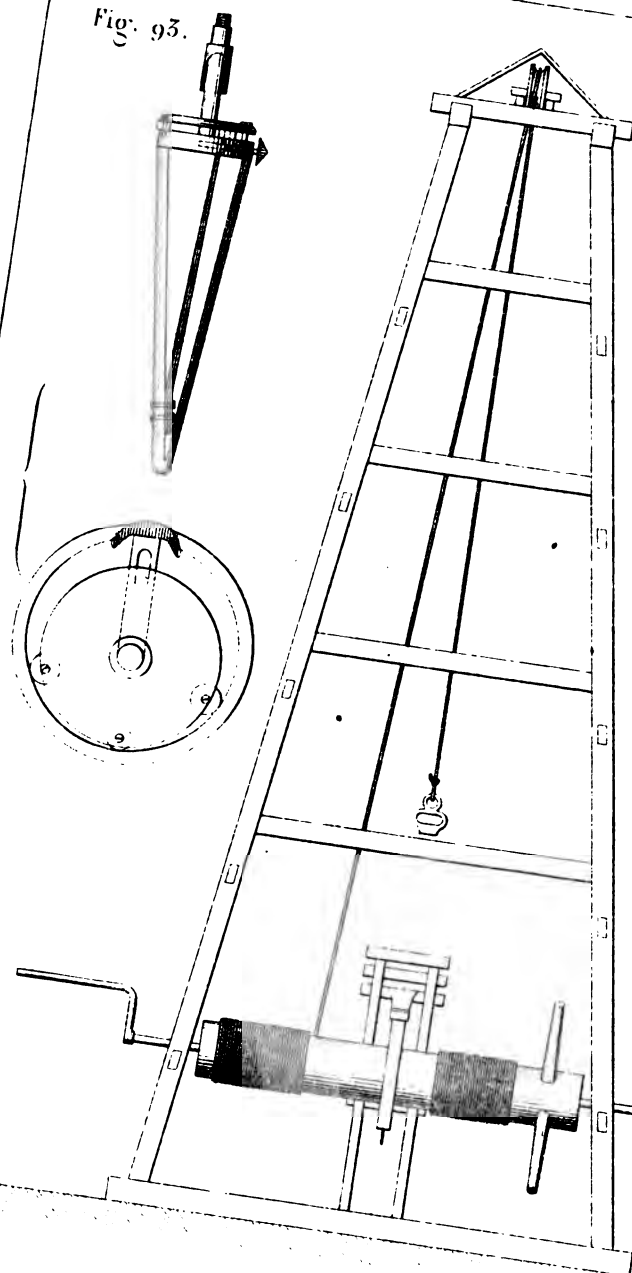


Fig. 94.



Fig. 95.

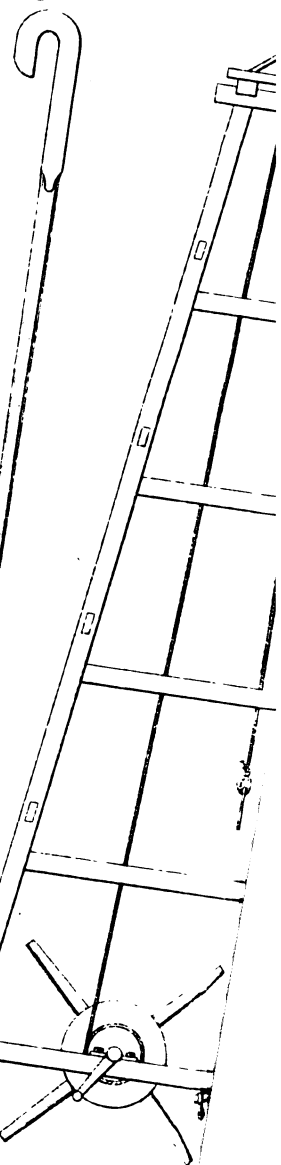


Fig. 96.

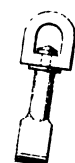


Fig. 97.



Fig. 99.

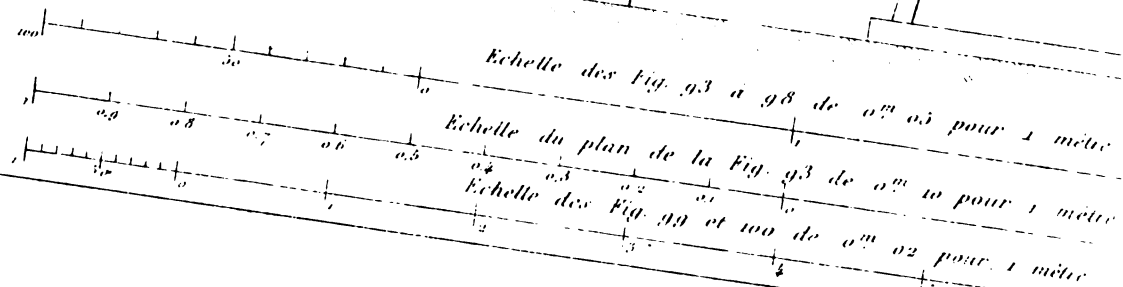
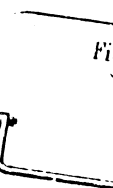


Fig. 98.

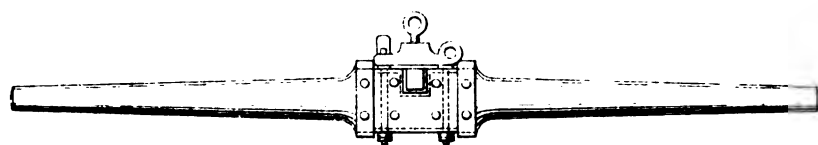


Fig. 92.

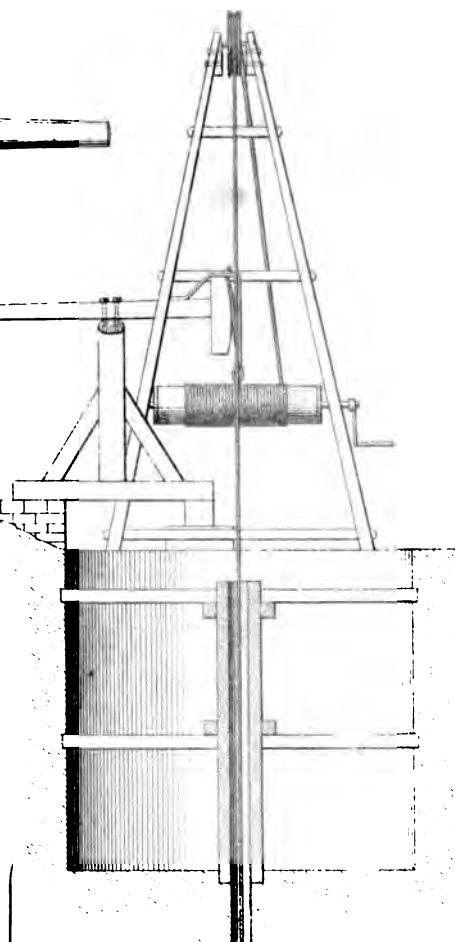
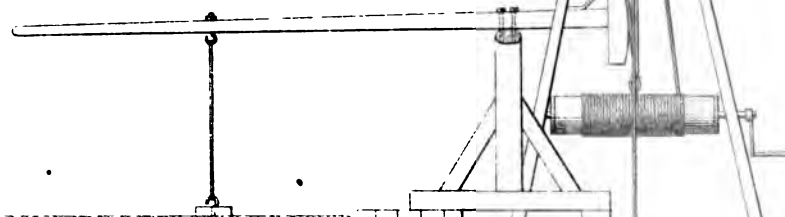
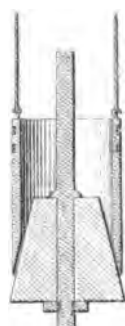
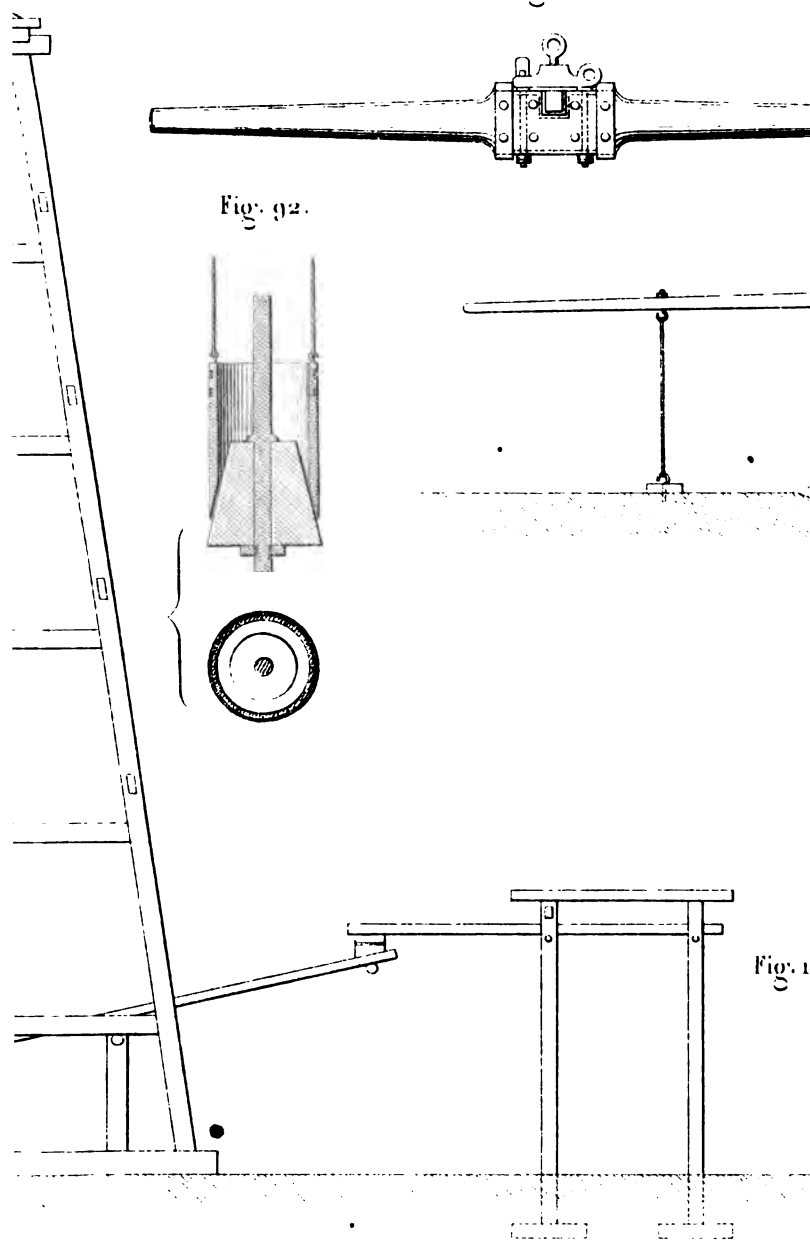
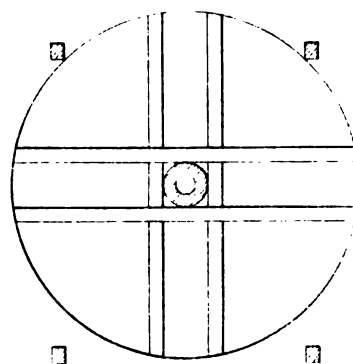


Fig. 100.



3 mètres

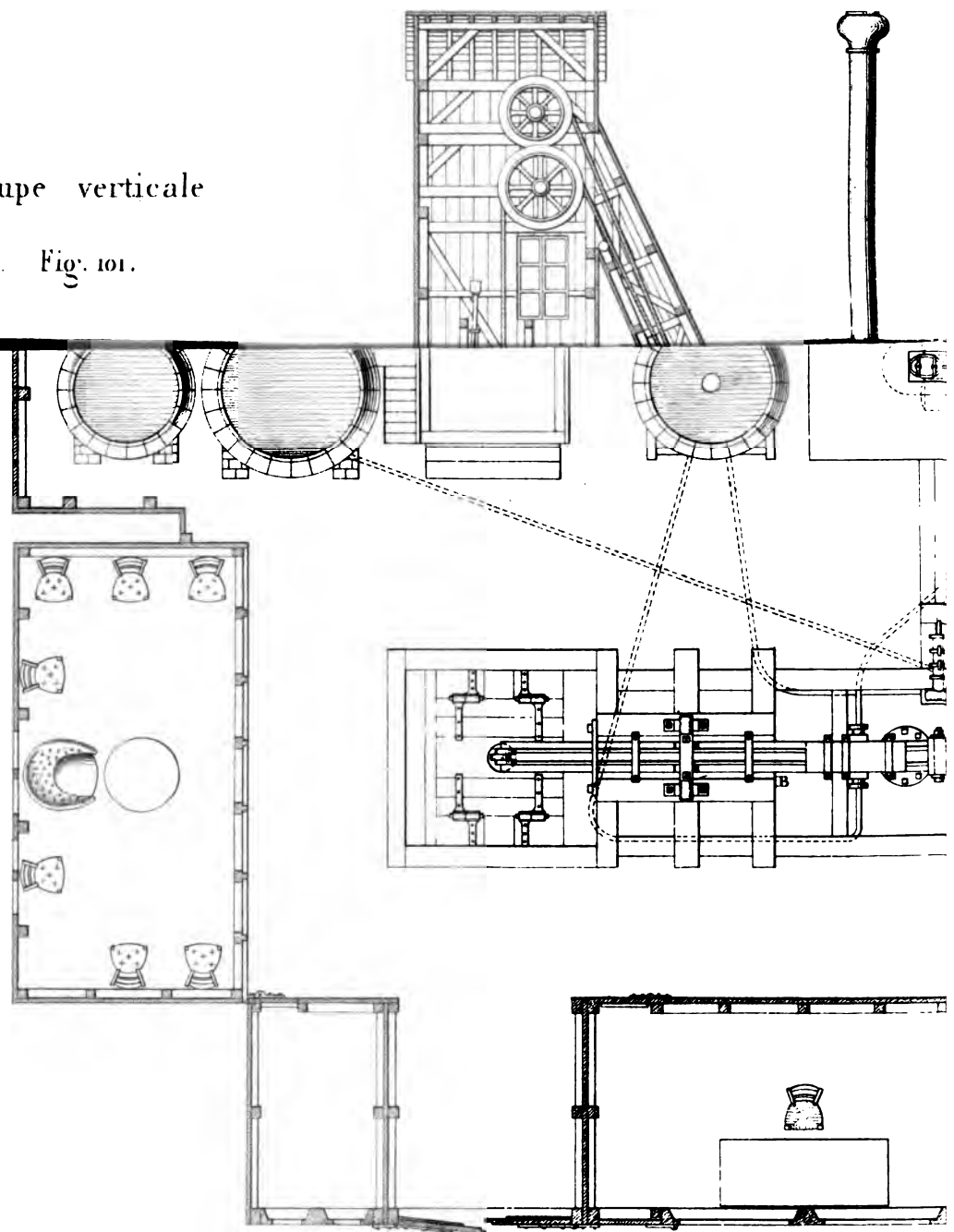
1 mètre

10 mètres

10

Coupe verticale

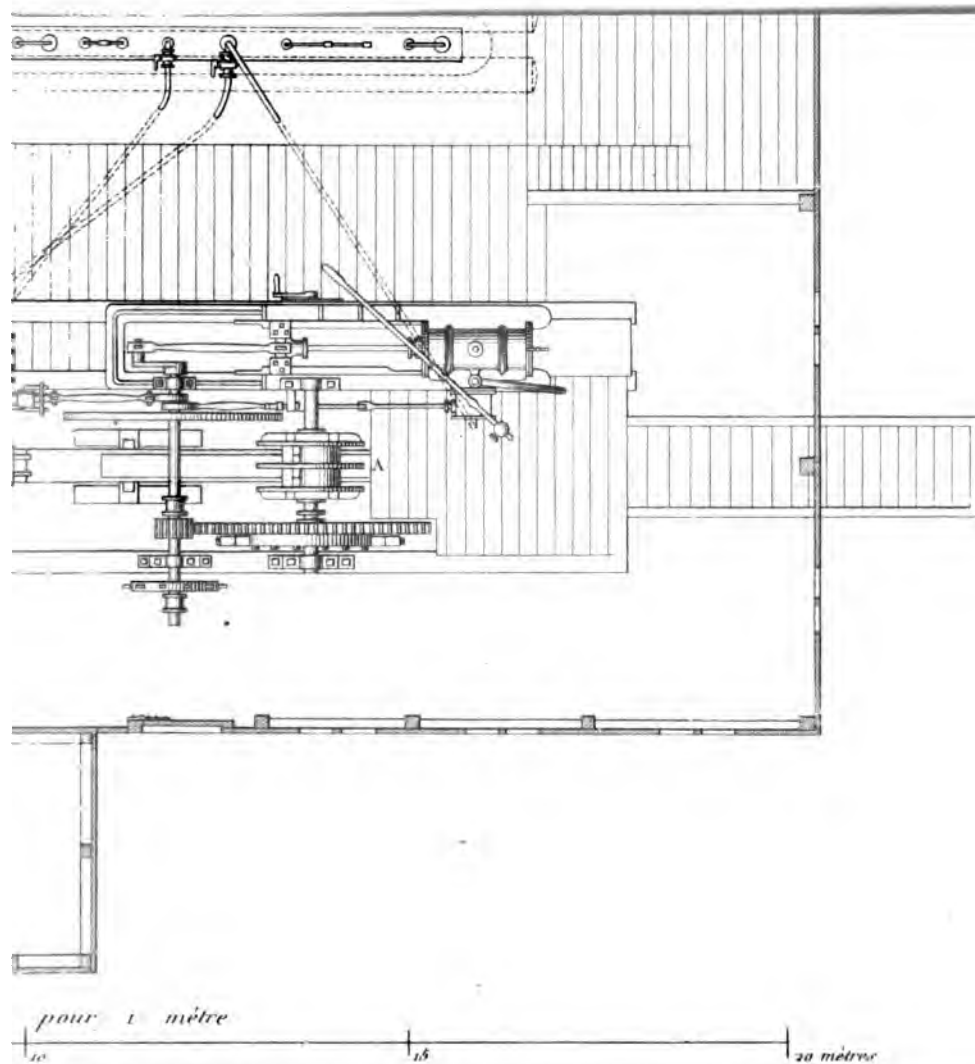
Fig. 101.



Echelle de 0^m 5

PUITS ARTESIEN DE PASSY

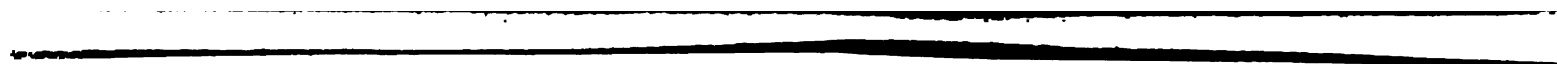
Par M^r KIND.



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100





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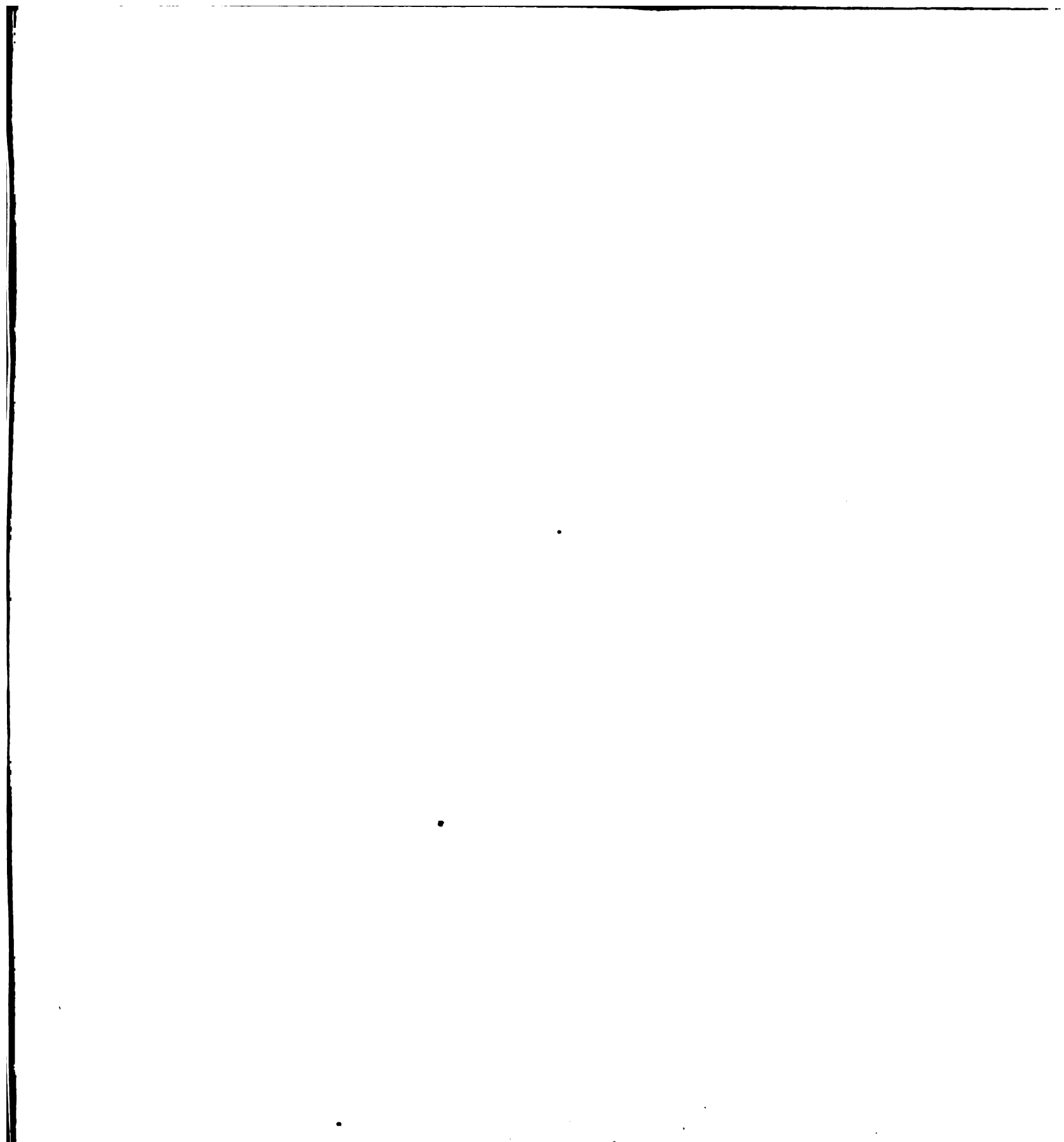
59

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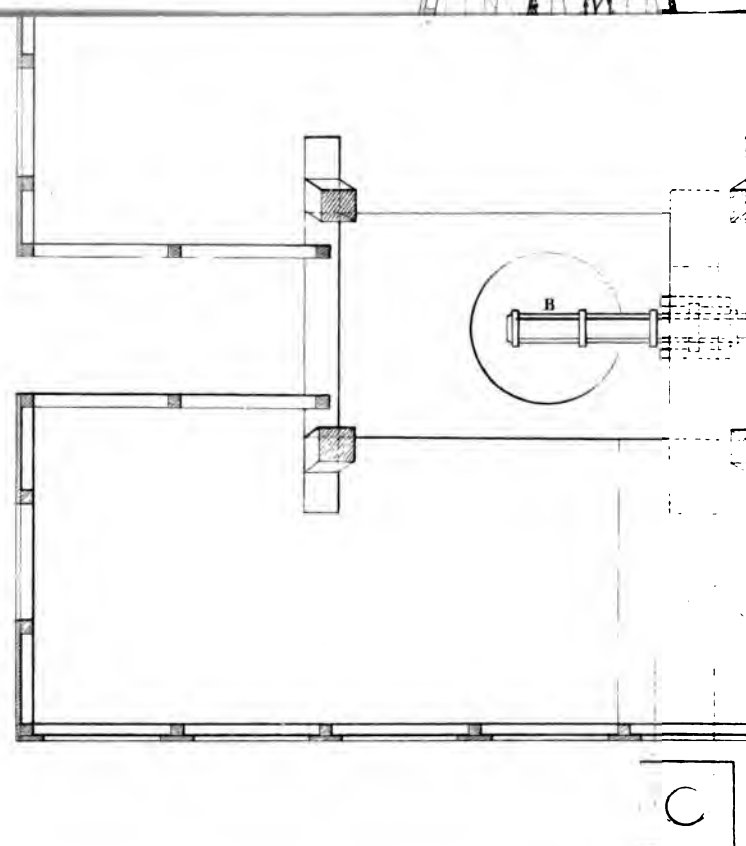
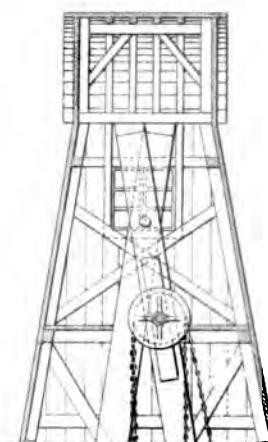
62

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Coupe verticale

Fig. 105.



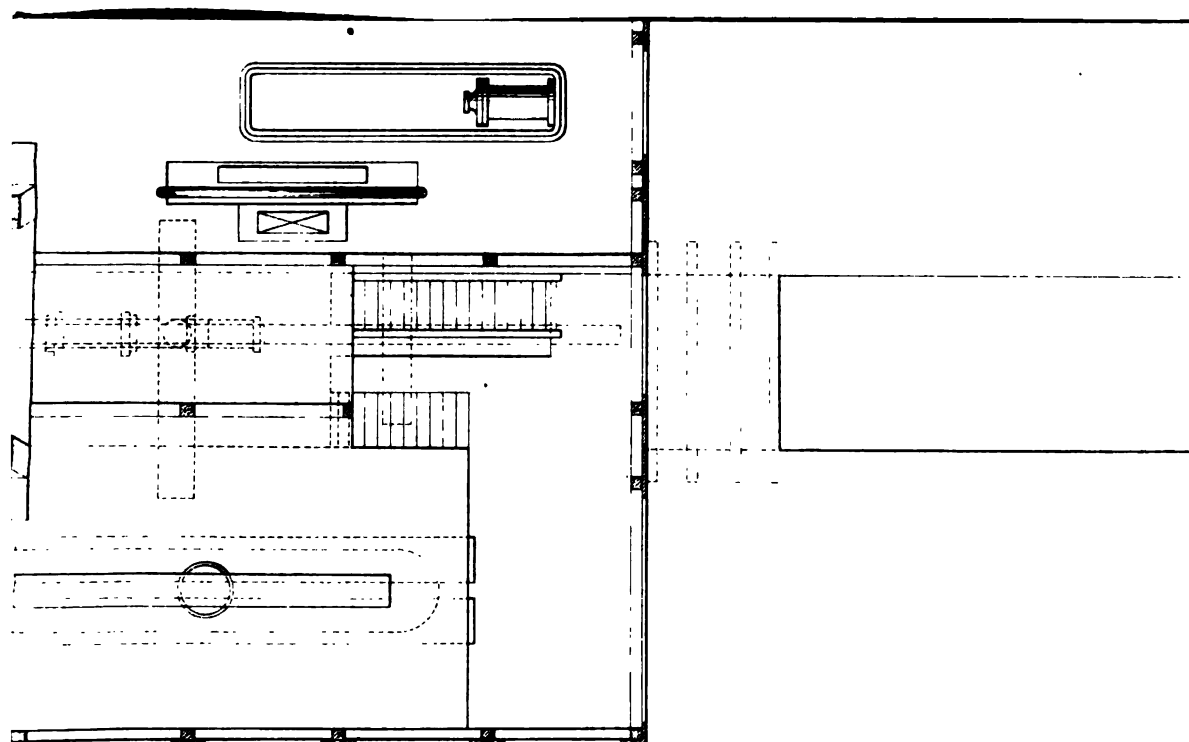
C

Echelle de 0 m



PUITS ARTESIEEN DE LA BUTTE AUX CAILLES

Par M^r DRU.

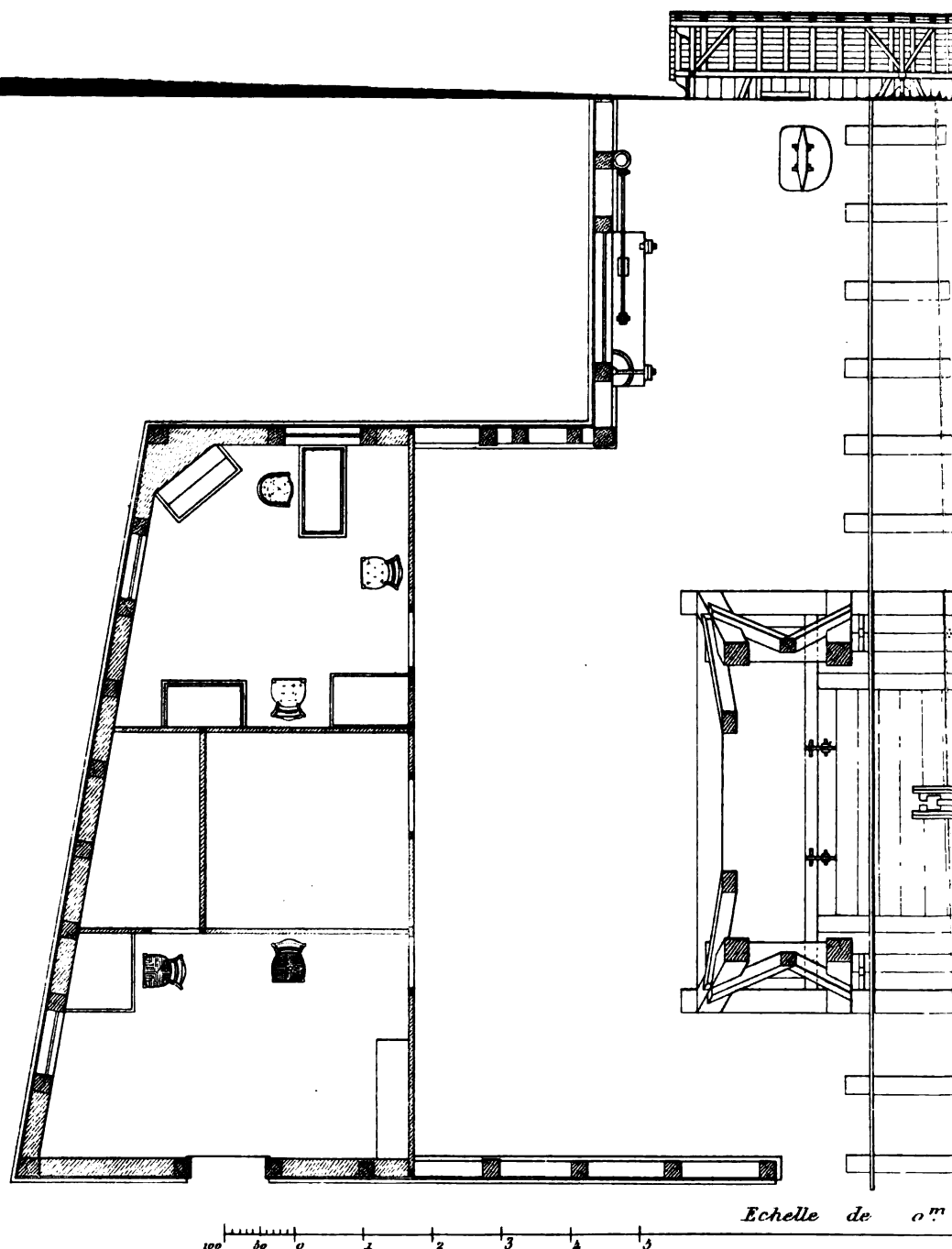


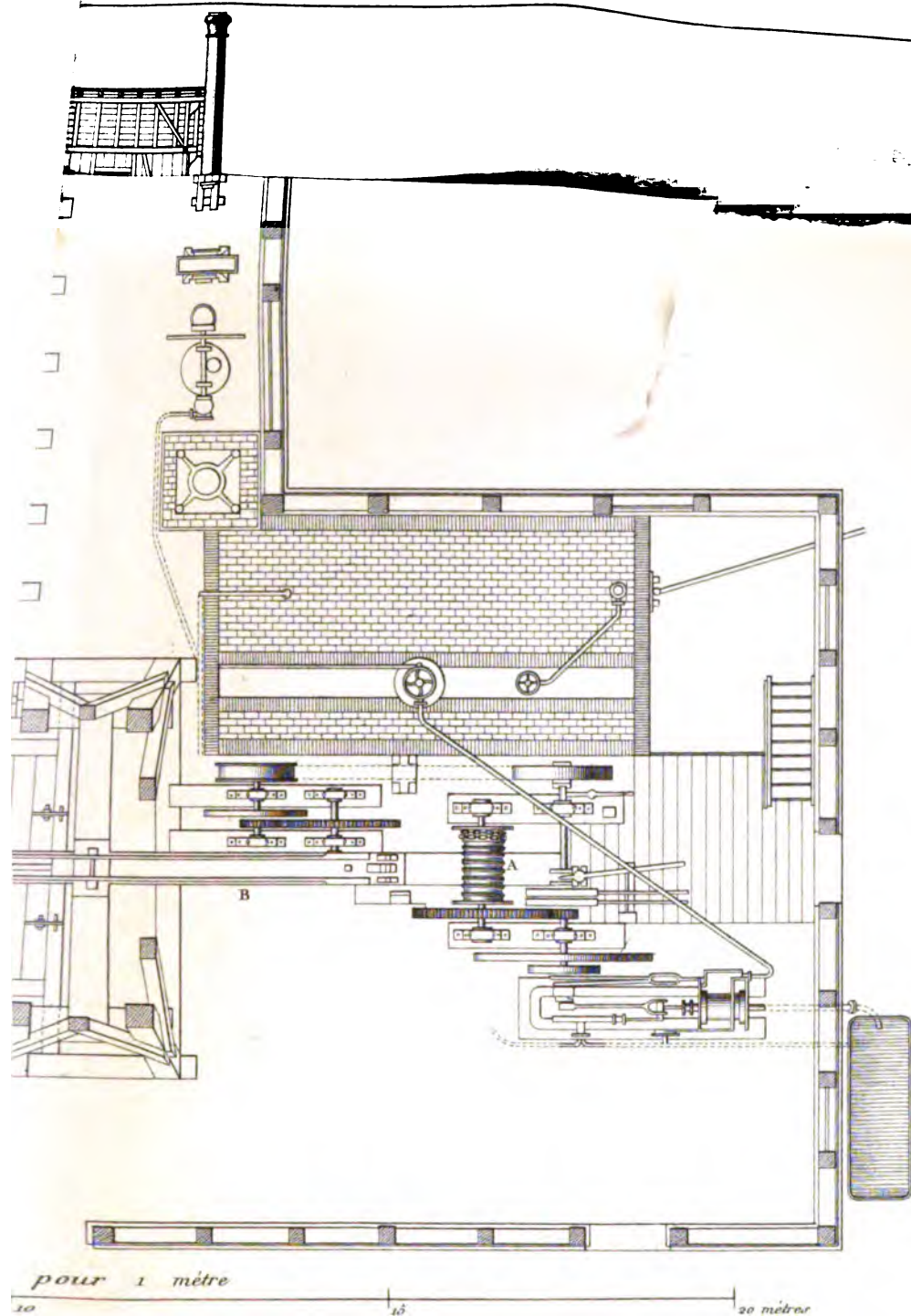
pour 1 mètre

15

10 mètres

Lemaître del. et ex.





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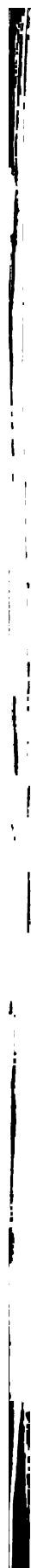
11

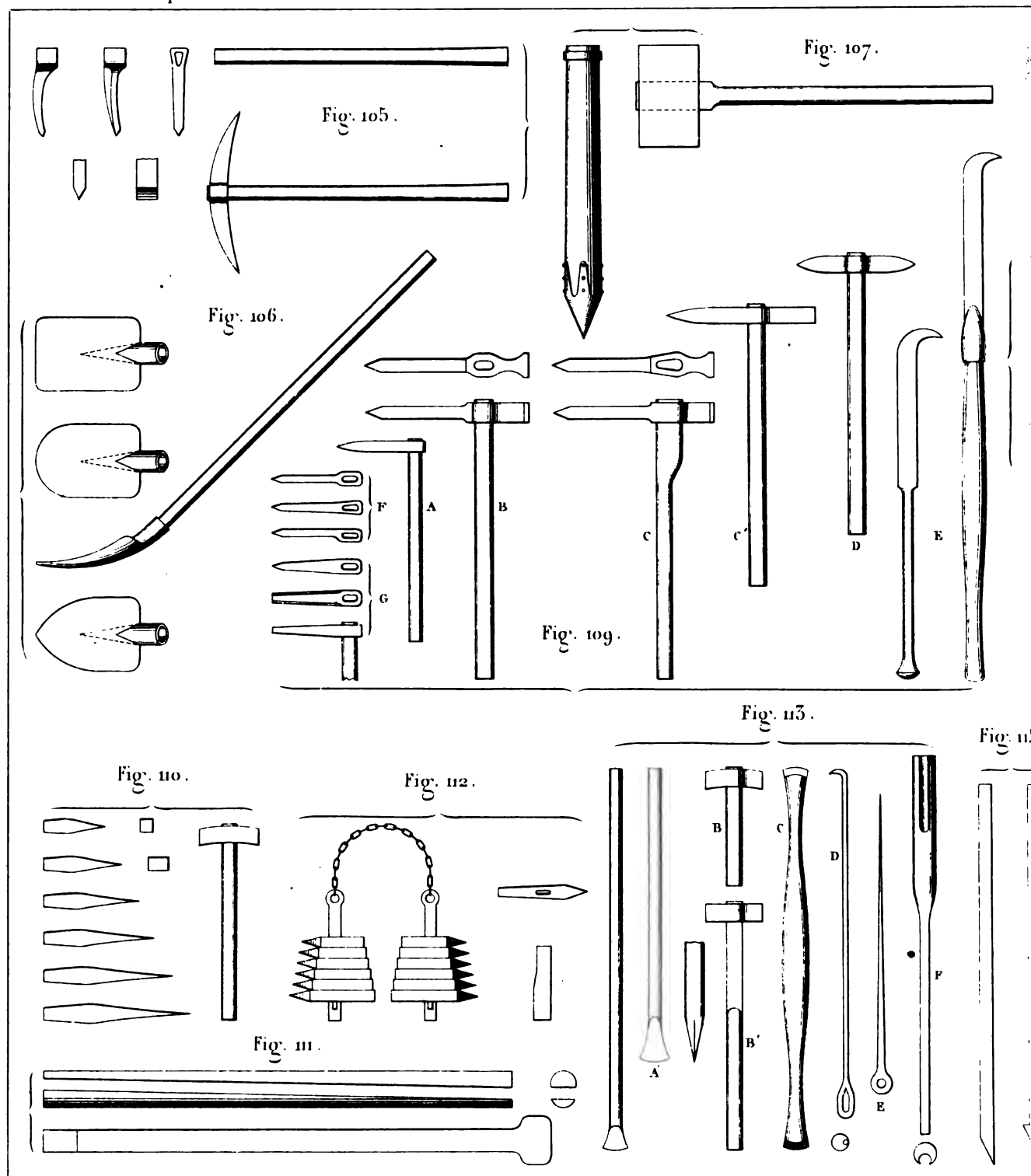
12

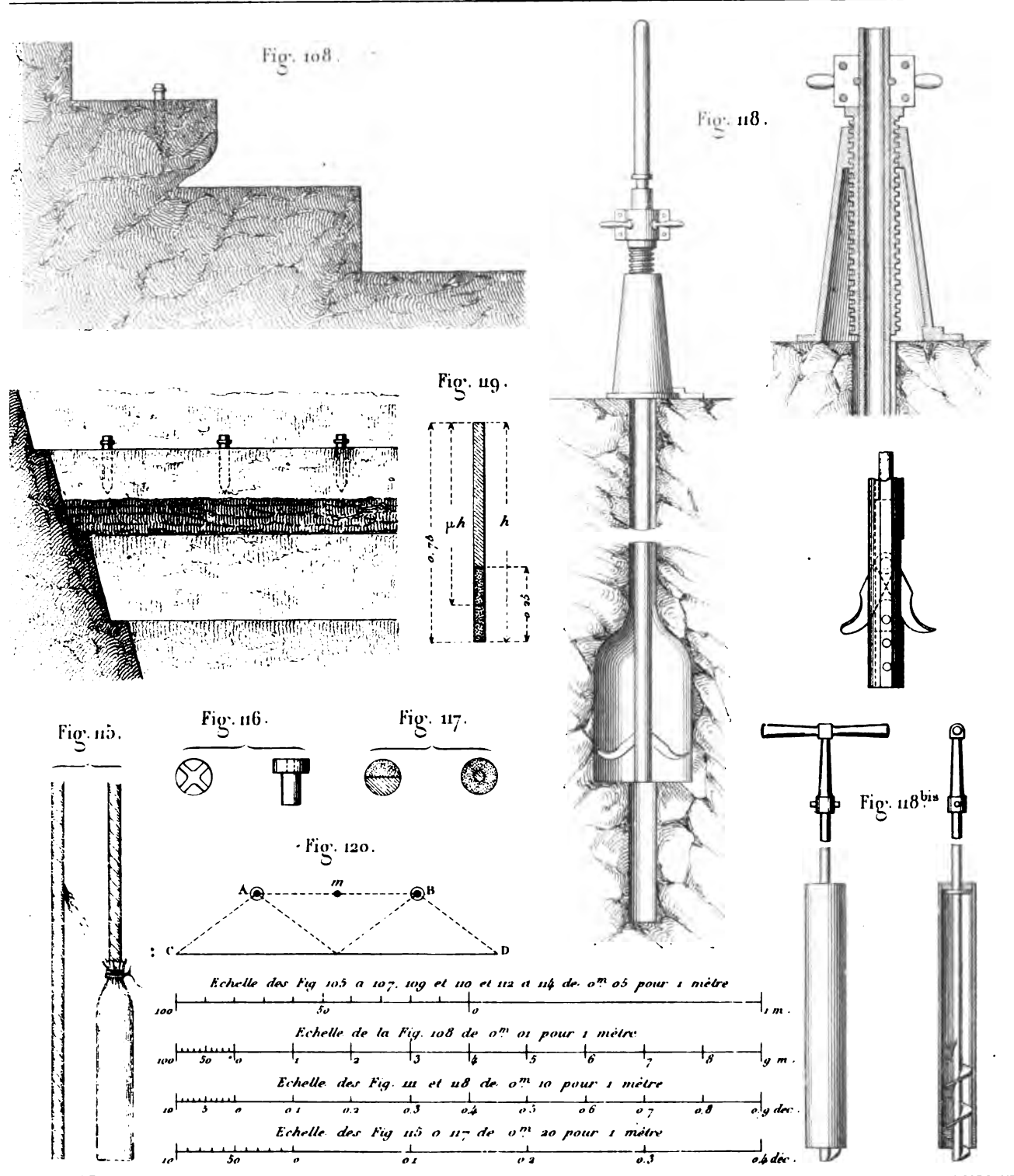
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Fig. 121

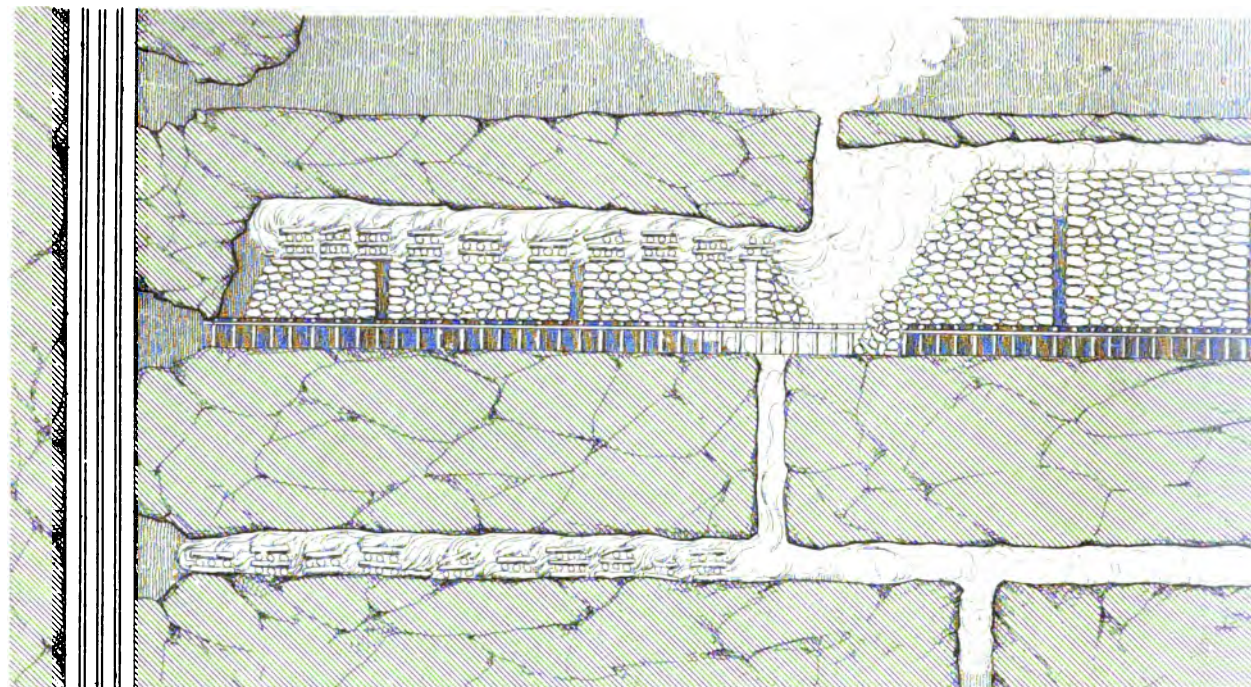
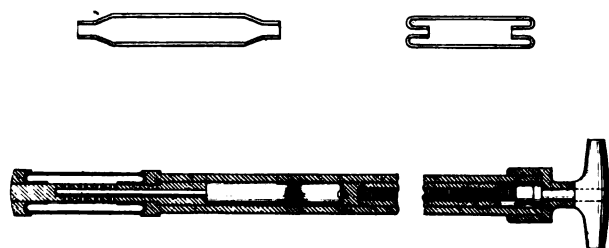
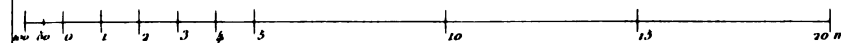


Fig. 124.

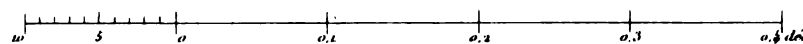
Fig. 123.



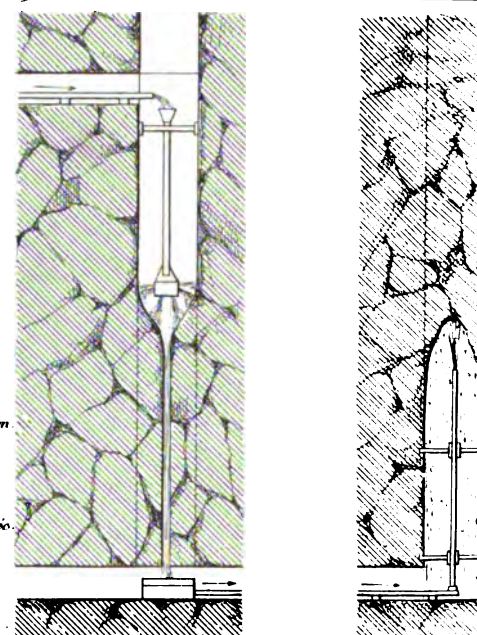
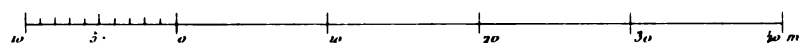
Echelle des Fig. 121 122 et 124 de 0^m 005 pour 1 mètre



Echelle de la Fig. 123 de 0^m 20 pour 1 mètre



Echelle de la Fig. 125 de 0^m 002 pour 1 mètre



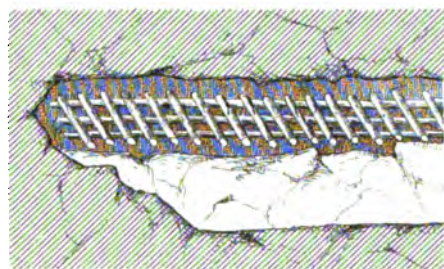
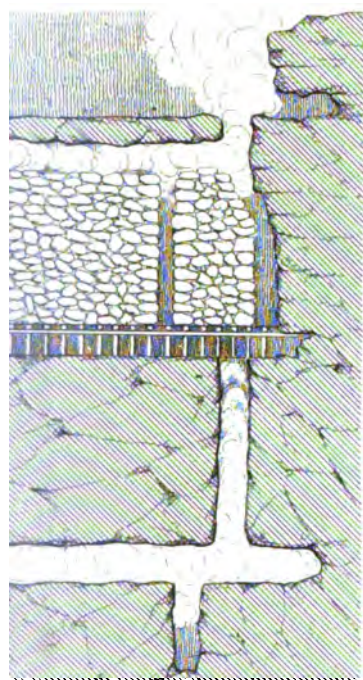


Fig. 122.

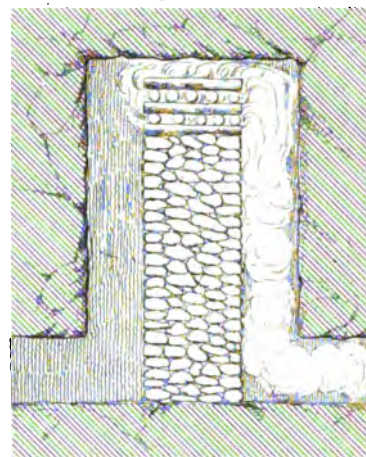
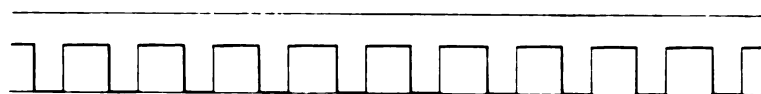
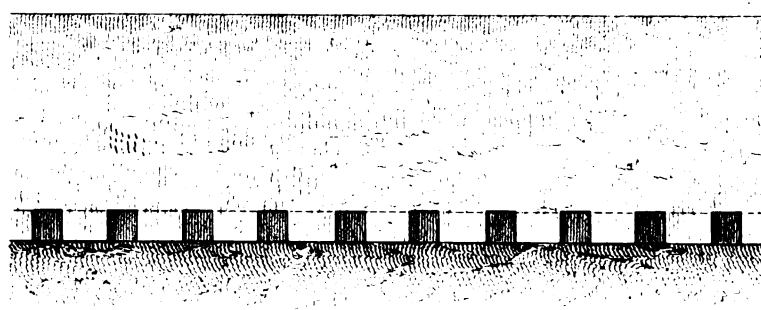
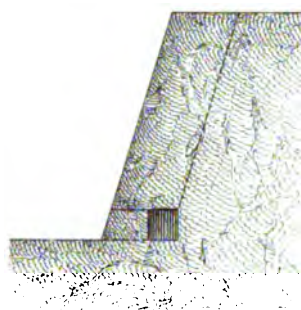
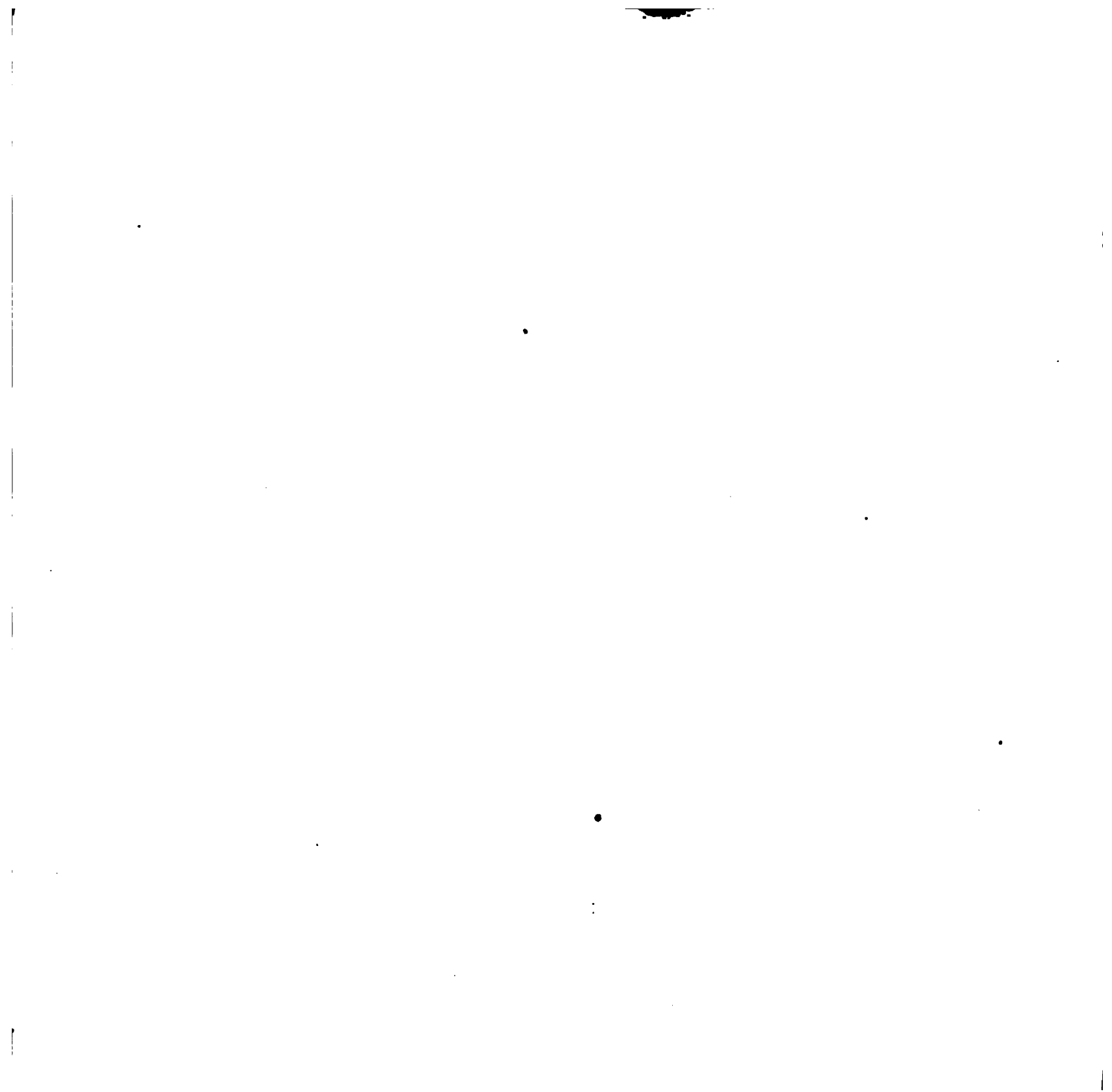


Fig. 125.





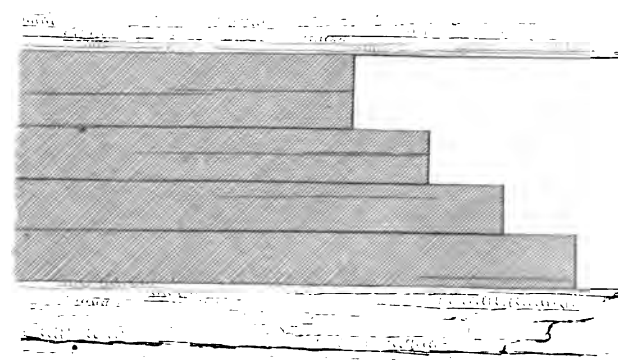
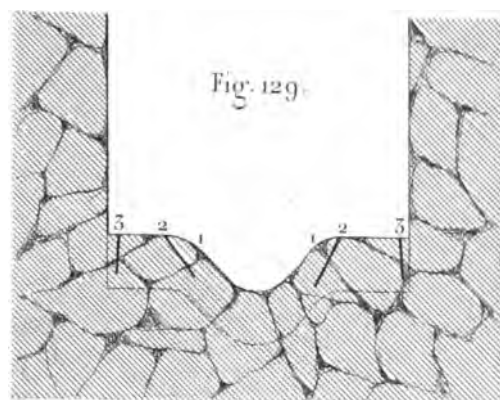
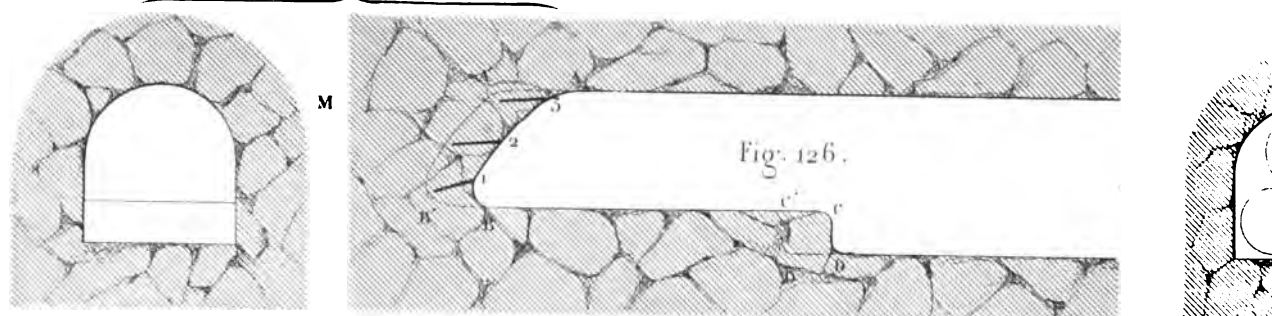
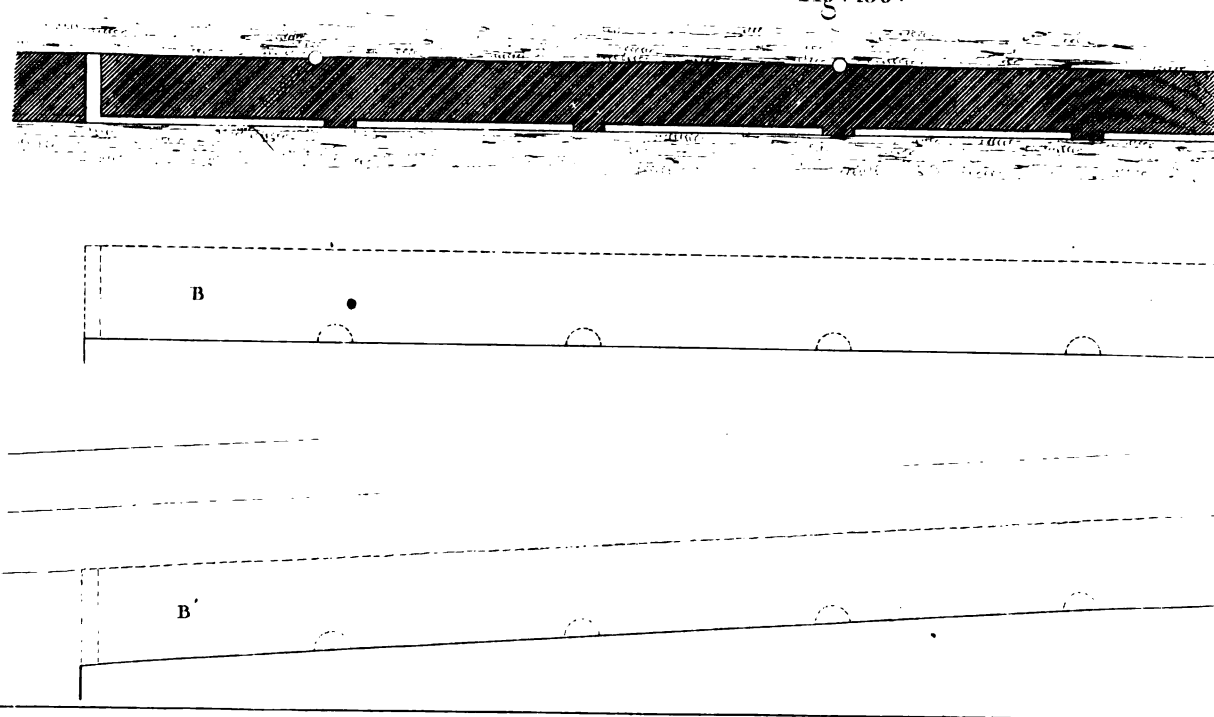


Fig. 130.



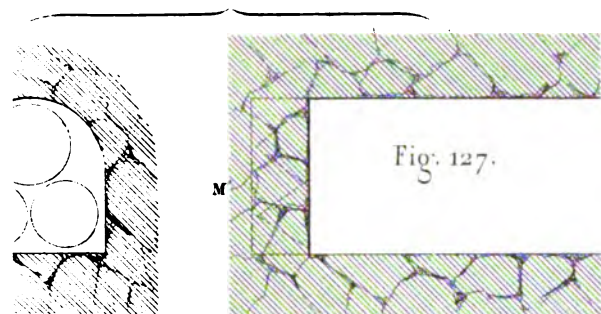


Fig. 131.

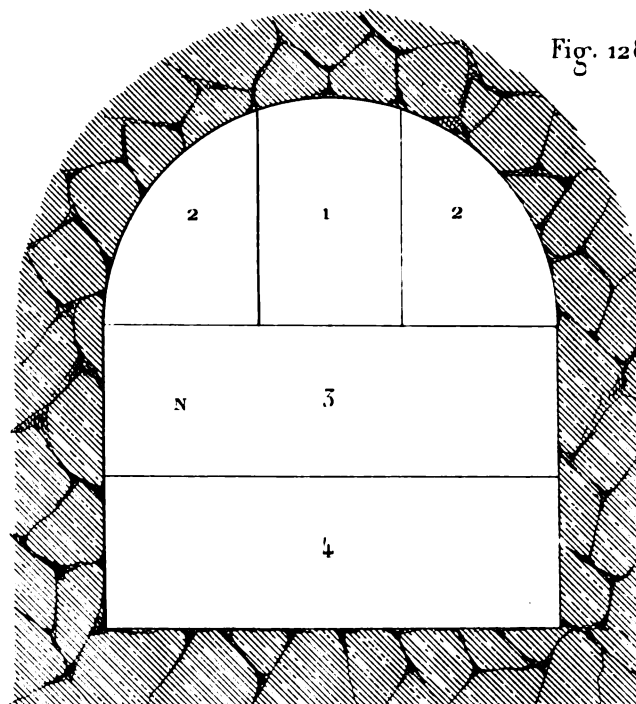
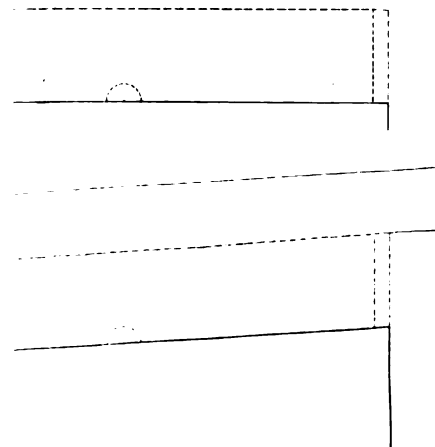
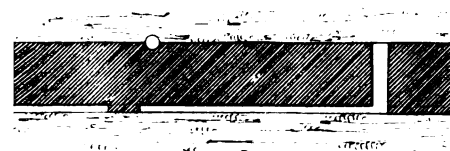
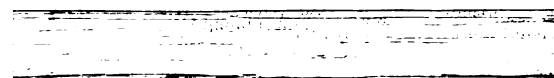
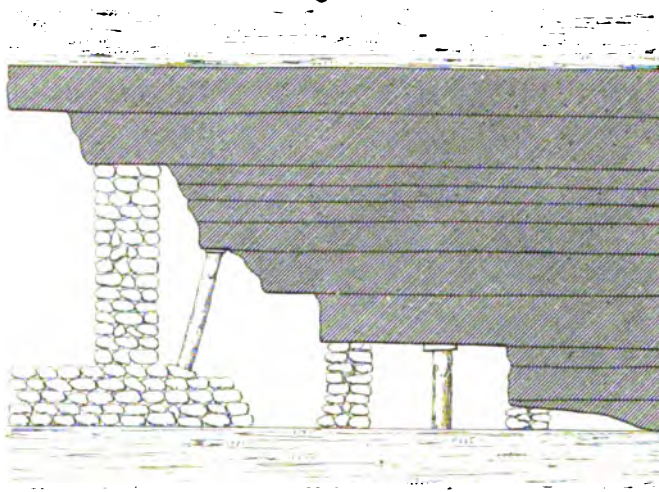
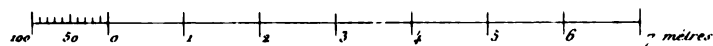


Fig. 128.

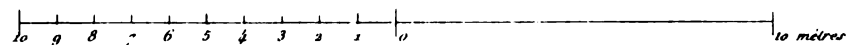
Fig. 132.



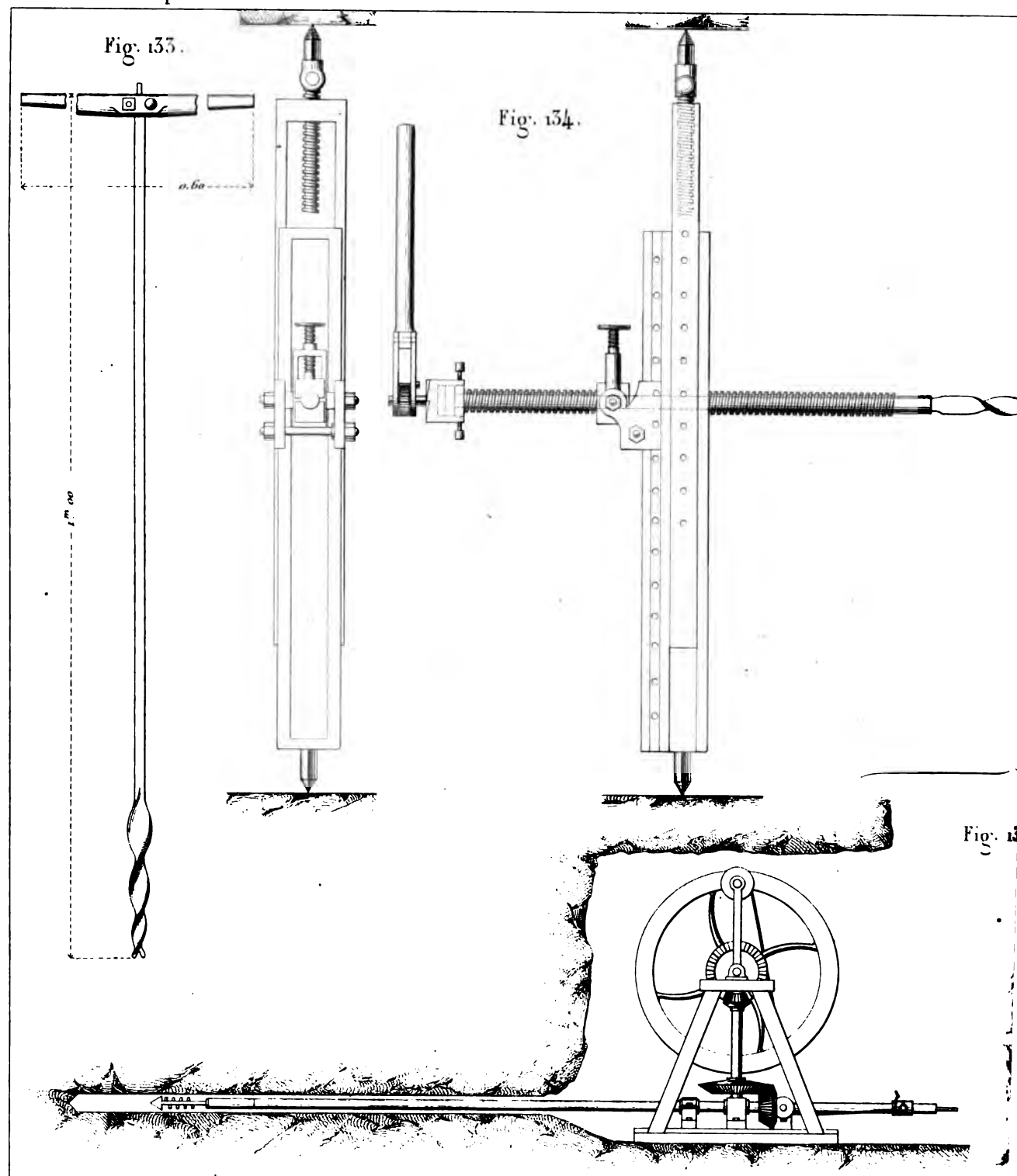
Echelle des Fig. 126 à 130 de 0^m 01 pour 1 mètre.



Echelle des Fig. 131 et 132 de 0^m 005 pour 1 mètre.







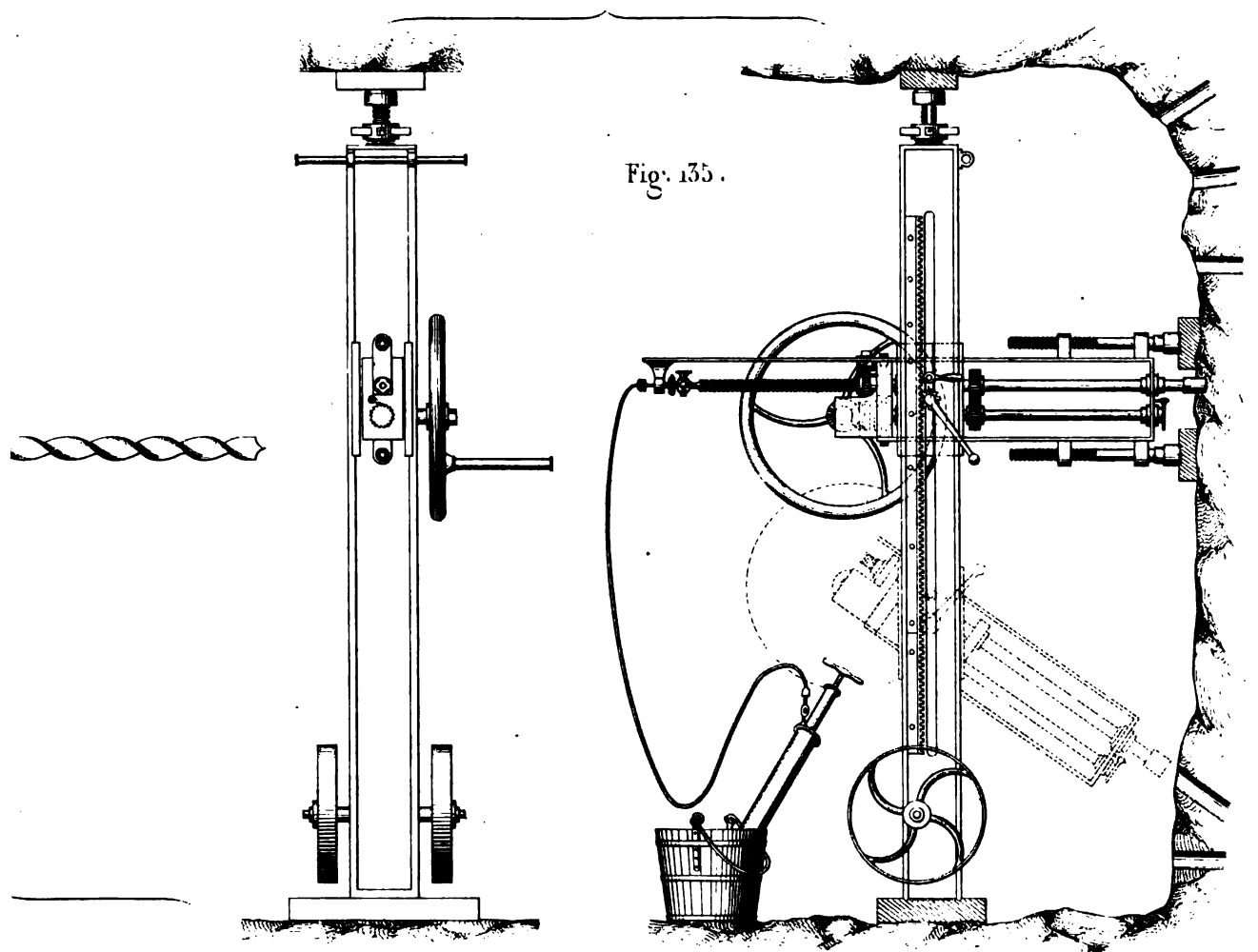
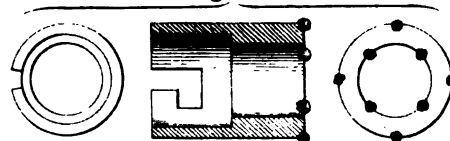
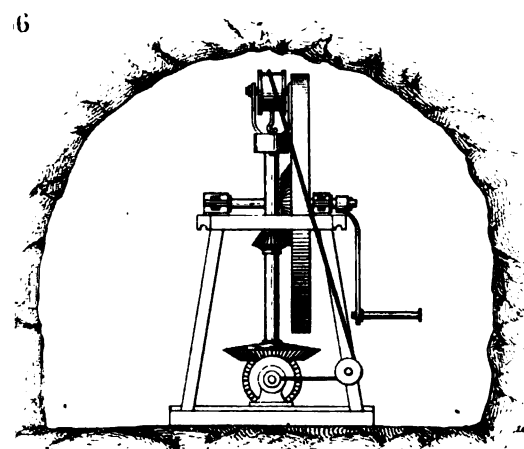


Fig. 135.

Fig. 135.



Echelle de la Fig. 134 de 0^m 10 pour 1 mètre

10 5 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 décim.

Echelle des Fig 135 et 136 de 0^m 05 pour 1 mètre

100 50 0 1 1 mèt.

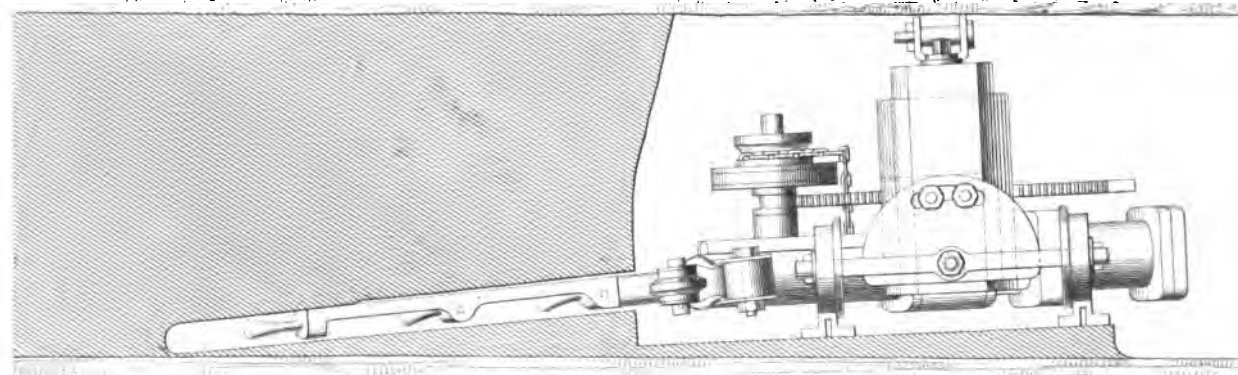
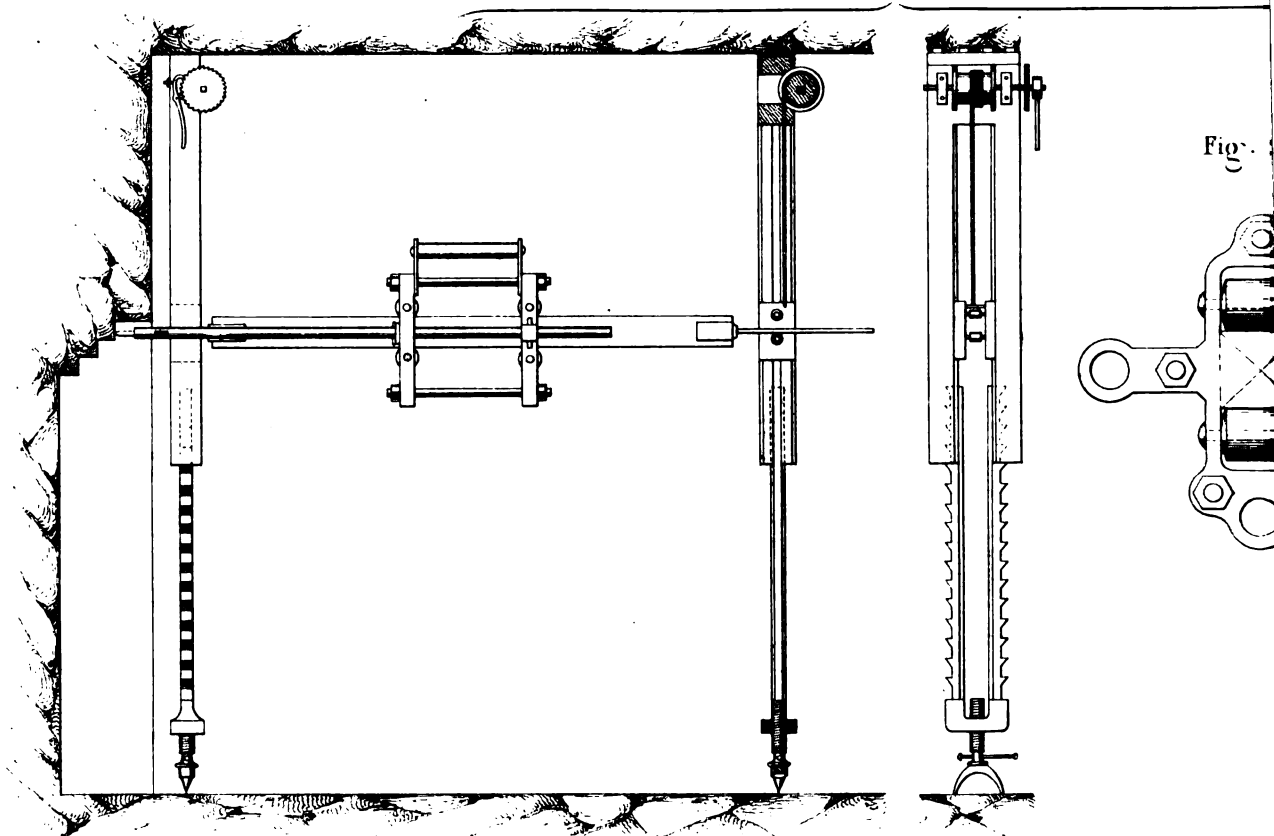
Echelle du détail de la Fig. 135 de 0^m 033 pour 1 mètre

100 50 0 1 1 mèt.

Lamotte del. et sc.



Fig. 137.



Echelle des Fig. 137 et 138 de 0^m 05 pour 1 mètre

100

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0

1 mèt

20

5

0.1

0.2

0.3

0.4

Echelle de détail de la

67.

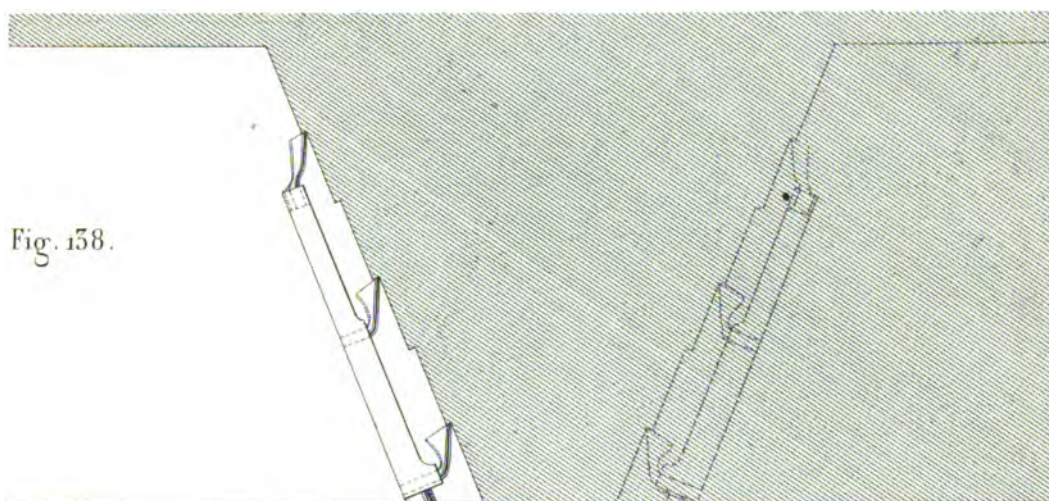
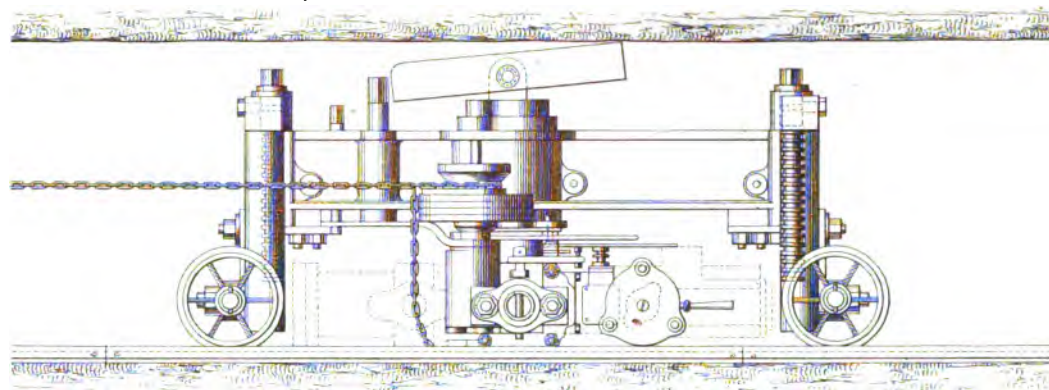


Fig. 138.

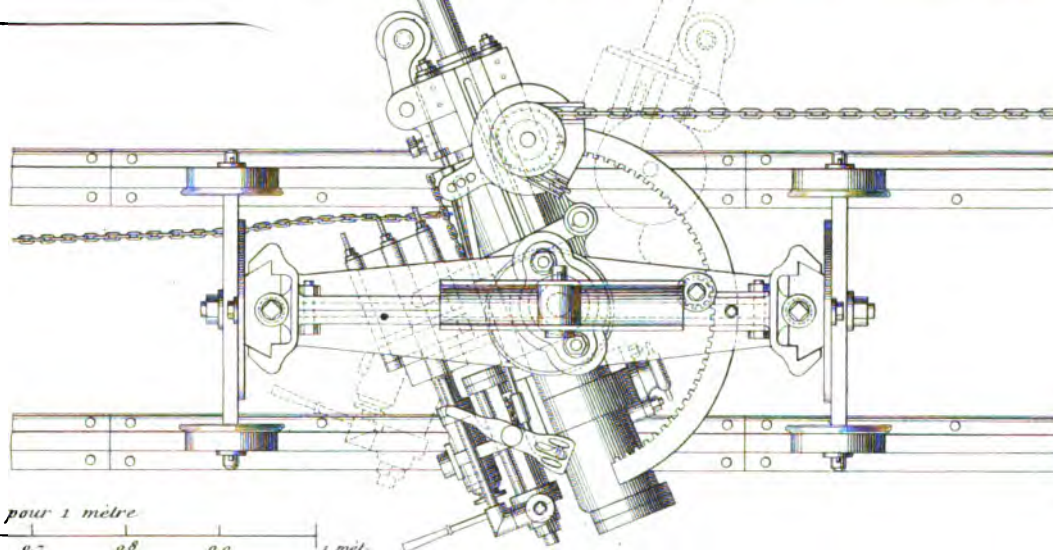


Fig. 137 de 0^m 125 pour 1 mètre

0.5 0.6 0.7 0.8 0.9 1 mèt.

Lemaître del. et sc.

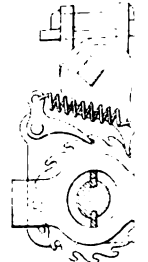
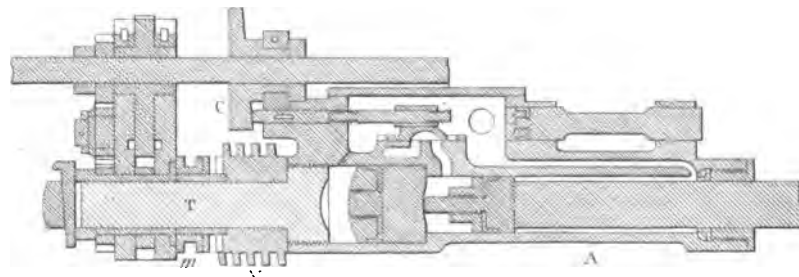
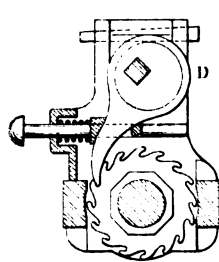
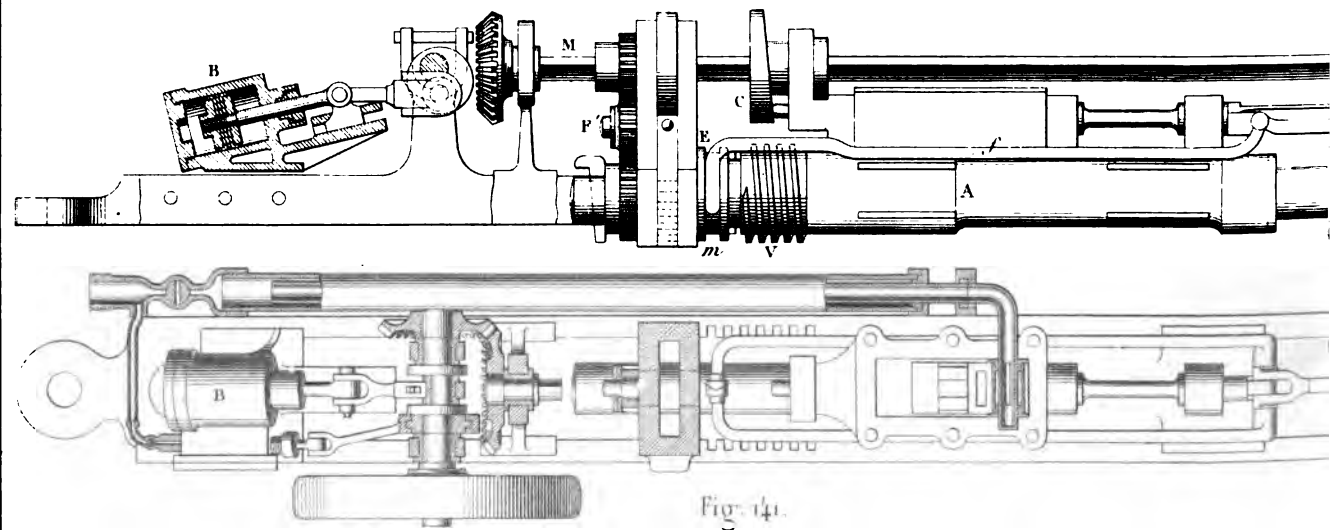
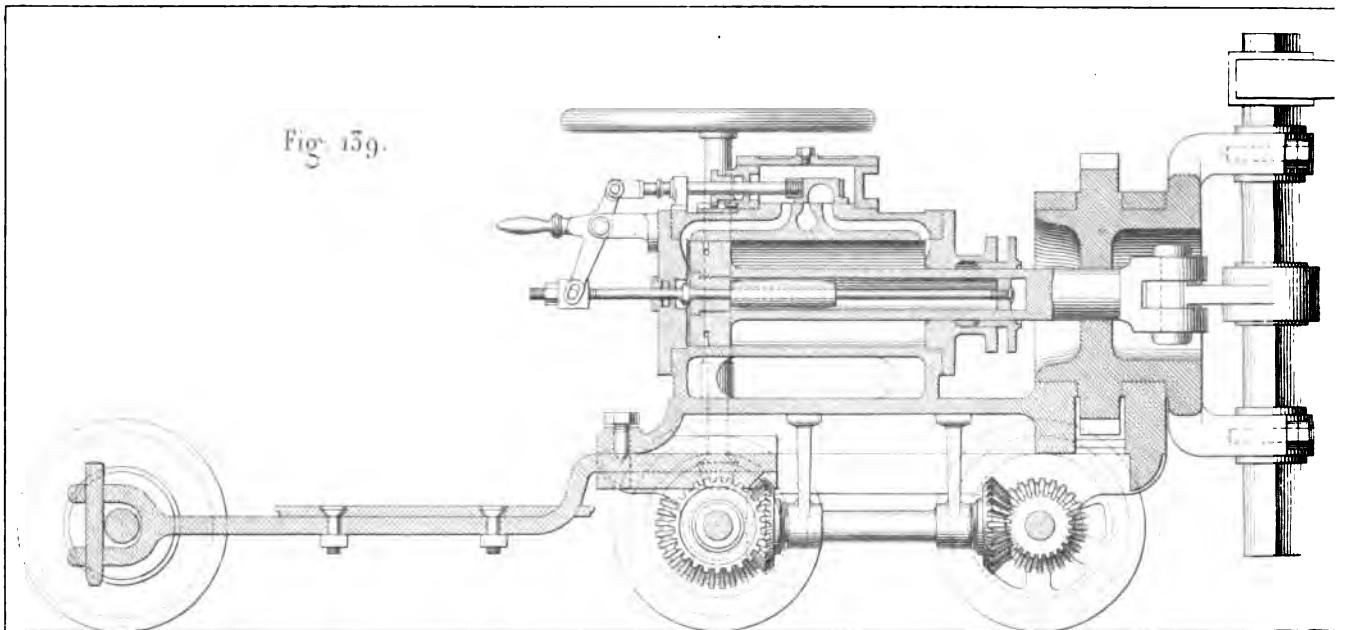


Fig. 140.

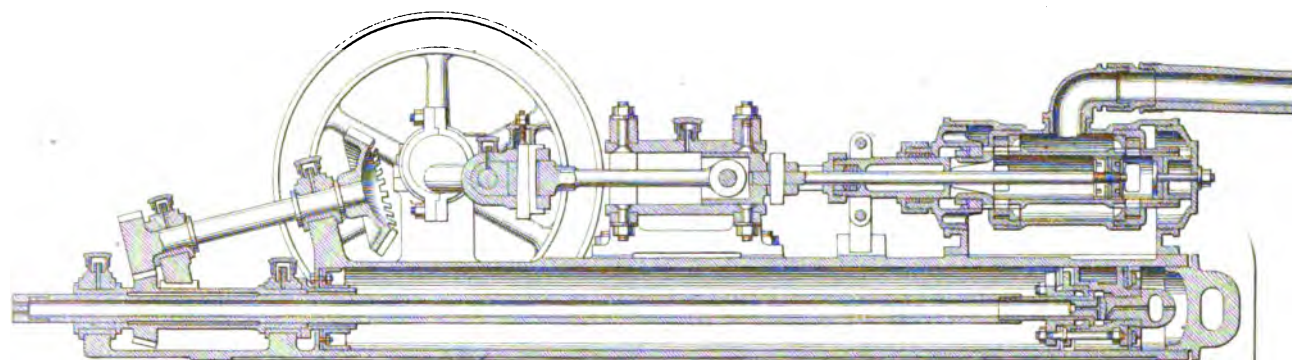
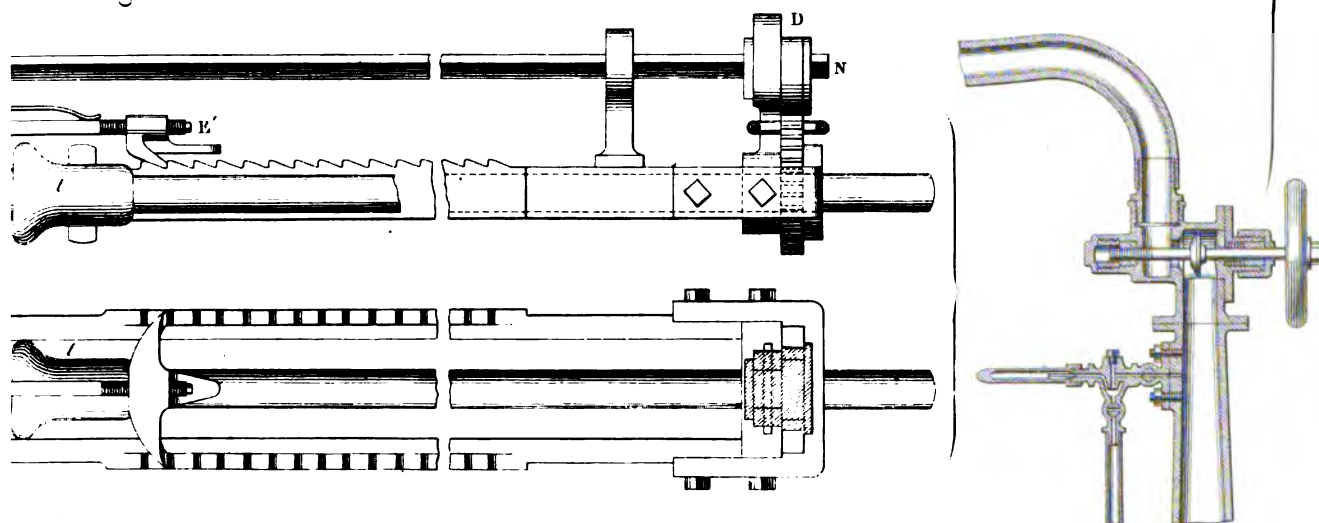


Fig. 140.

Fig. 141.



Echelle de 0^m 10 pour 1 mètre

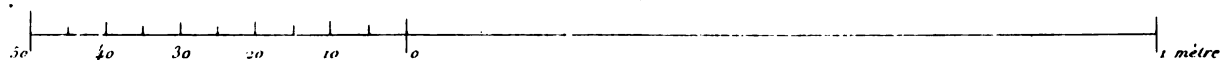
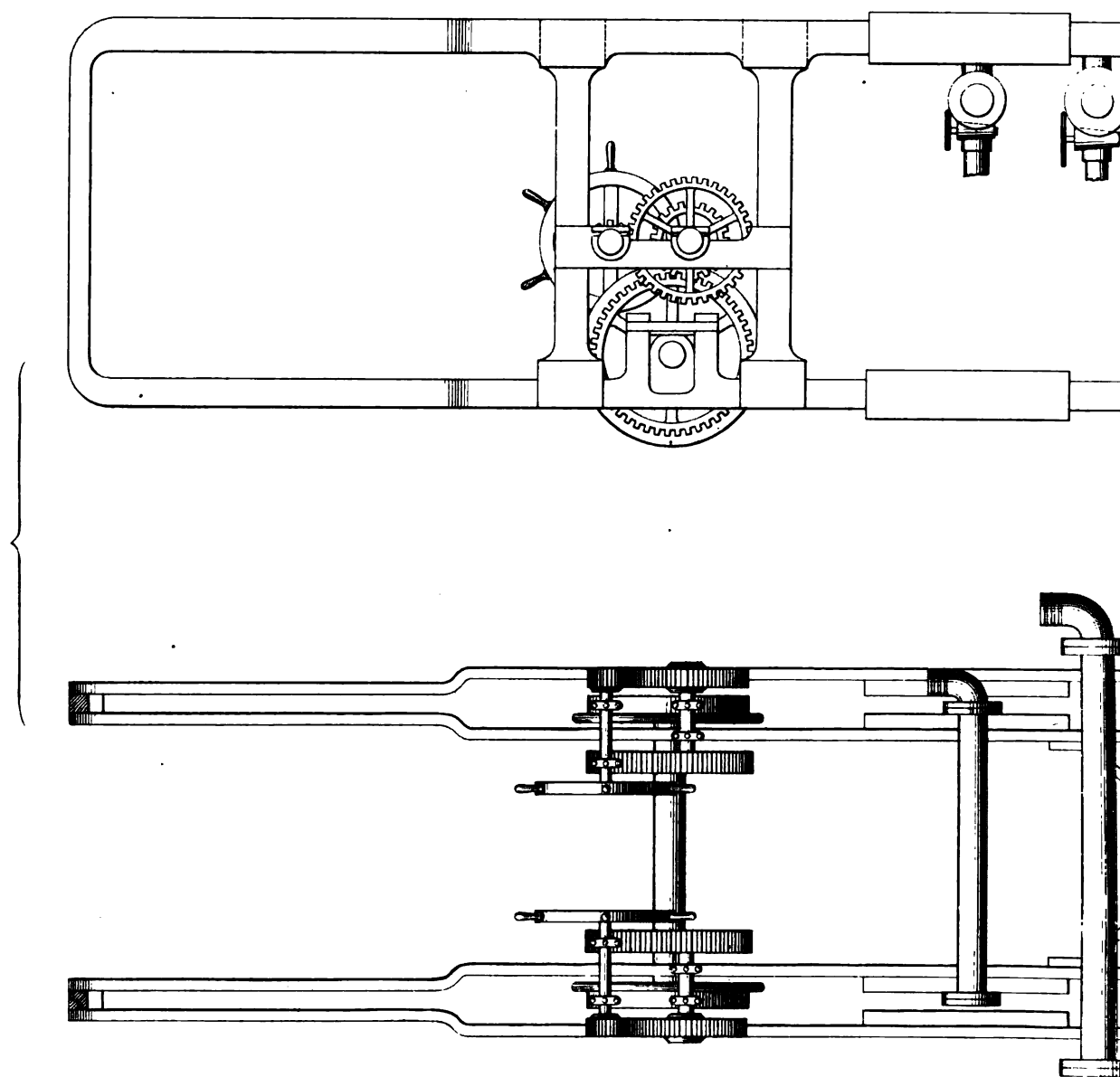
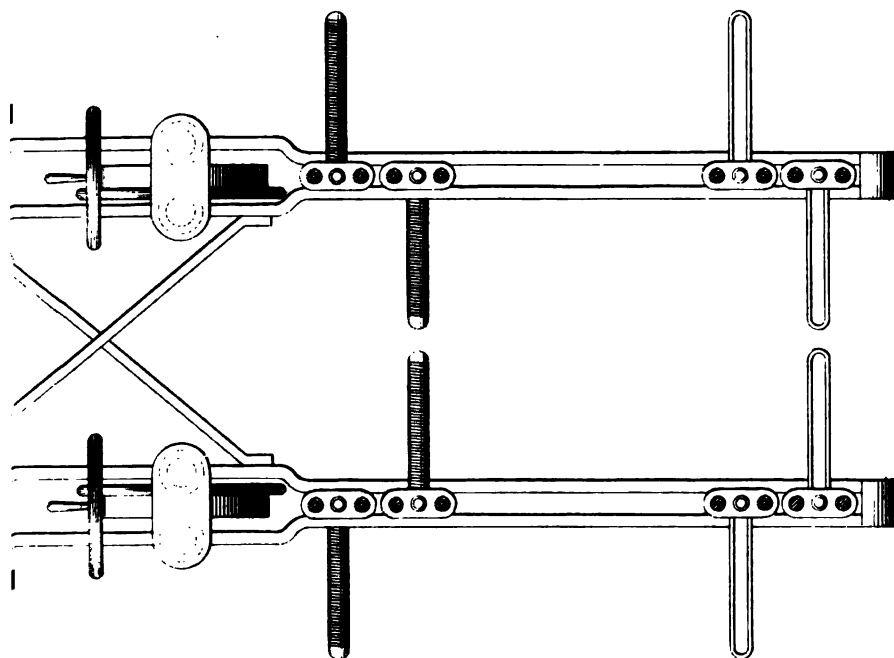
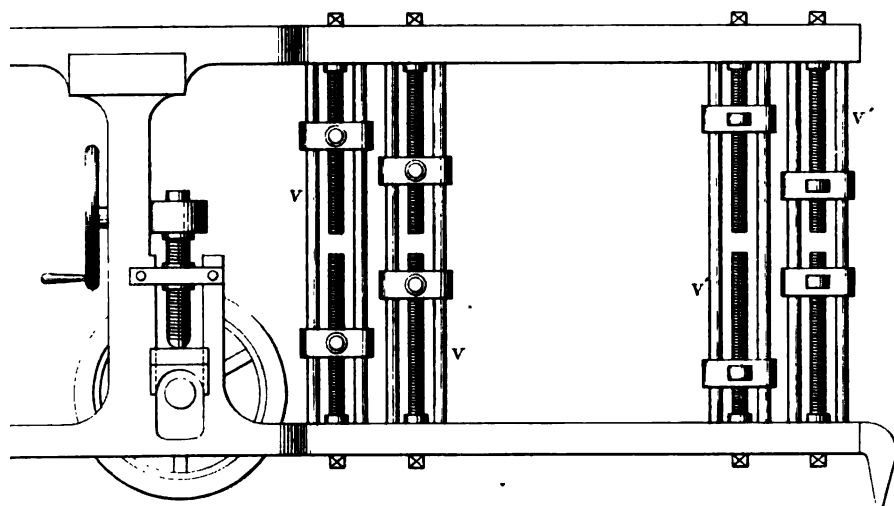


Fig. 142.



Echelle de 0^m 0.33 p

100 50 0 1 2



ur 1 mètre

3 4 5 6 mètres



Fig. 143.

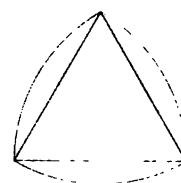
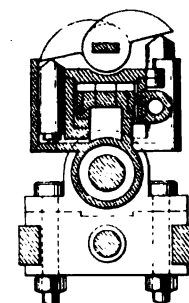
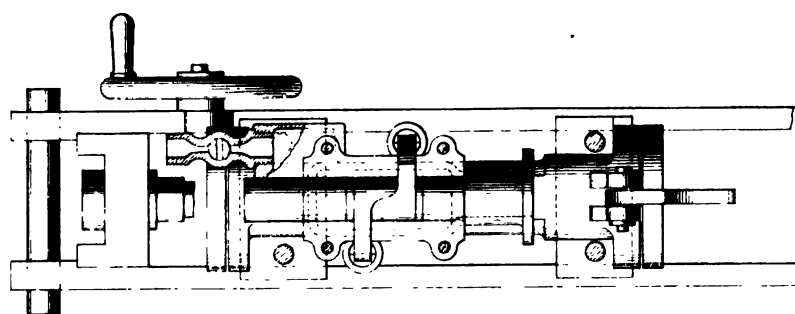
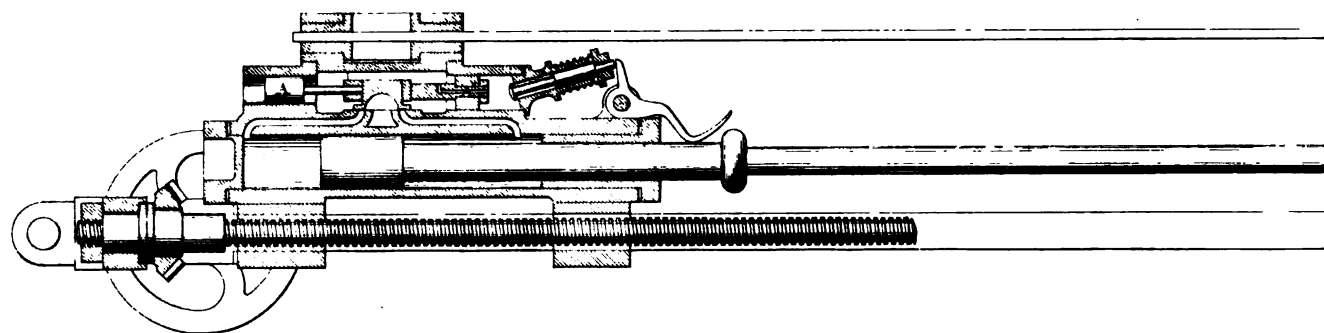
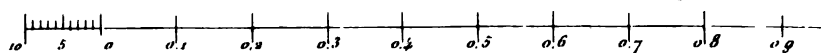




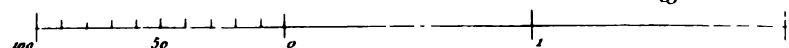
Fig.



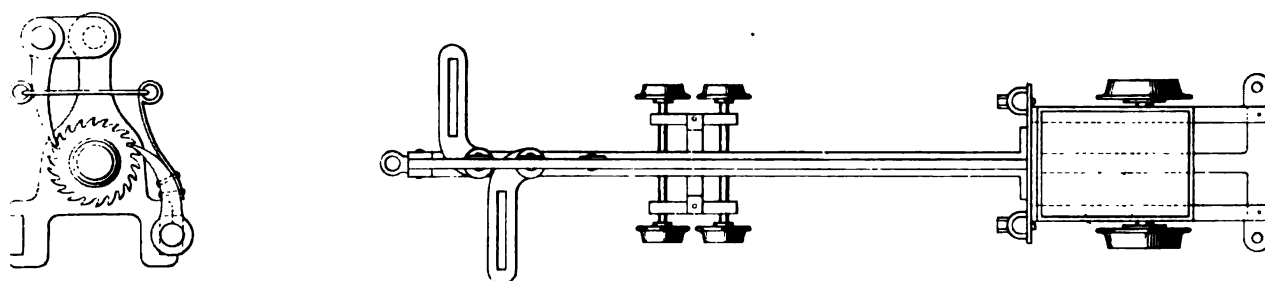
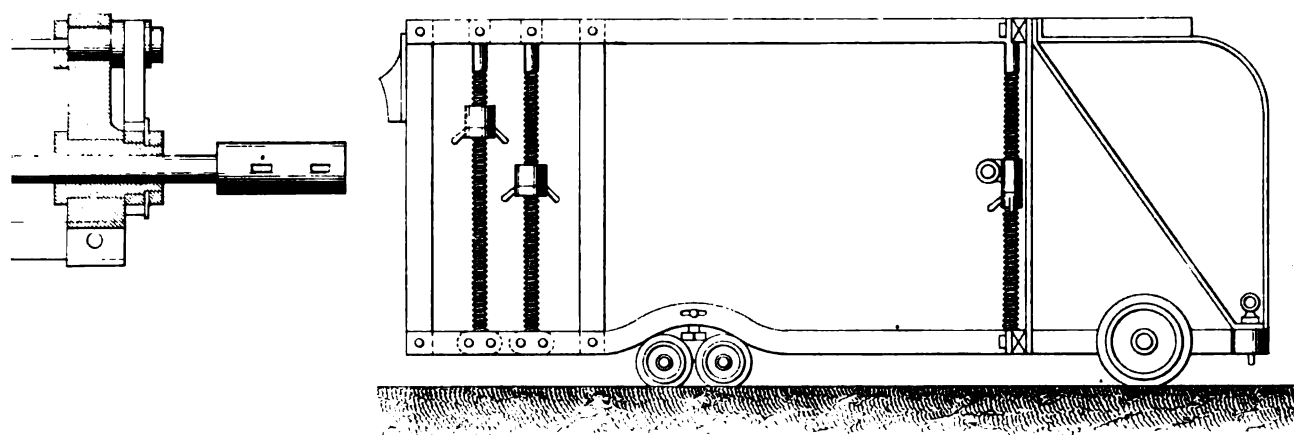
Echelle du Perforateur a



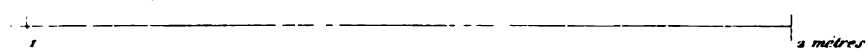
Echelle de l'Affut de



144.



0^m 10 pour 1 mètre.



0^m 0.33 pour 1 mètre.

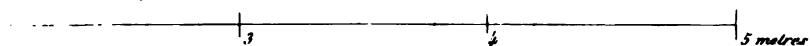


Fig. 145.

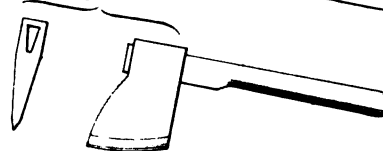


Fig. 146.

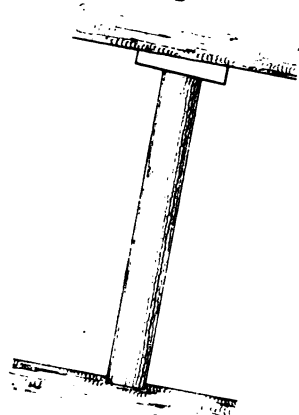


Fig. 147.

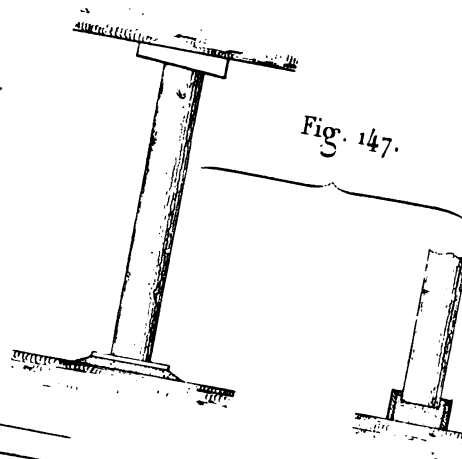


Fig. 148.

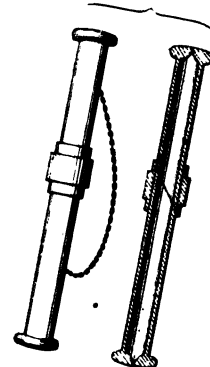


Fig. 149.

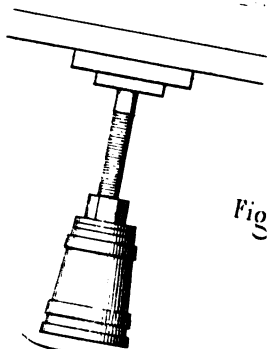


Fig. 150.

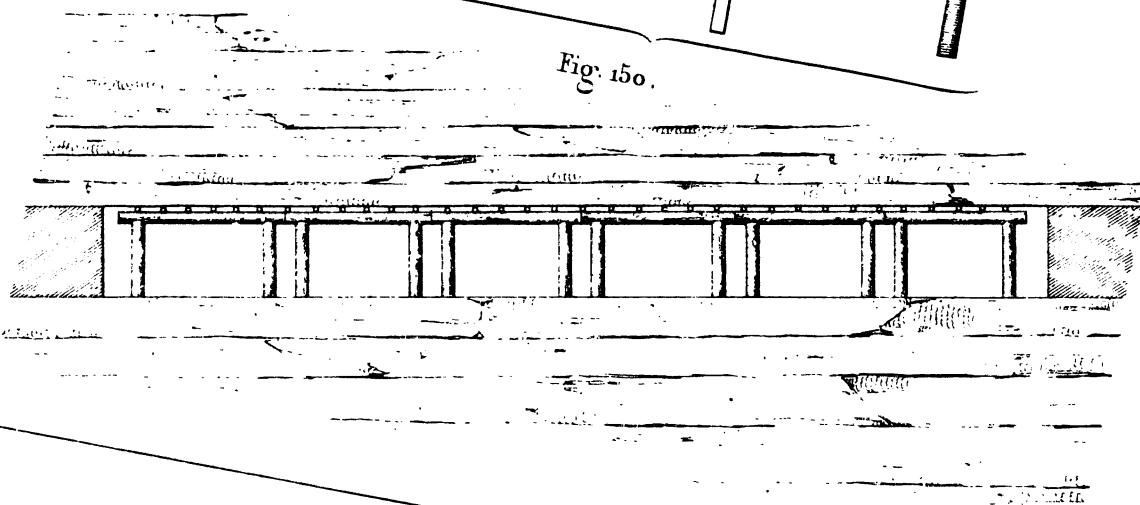
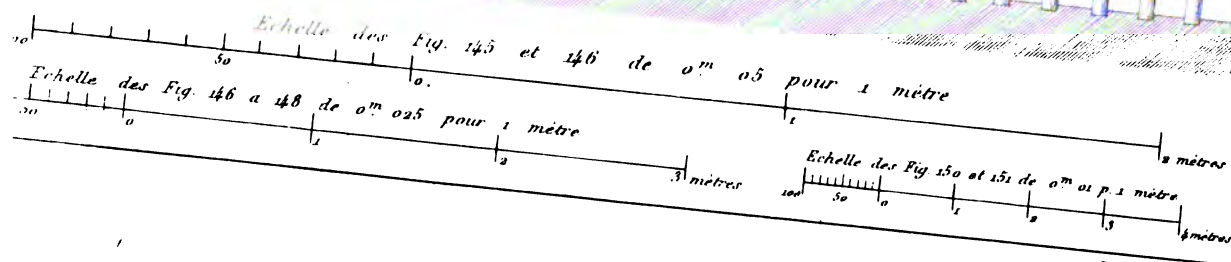
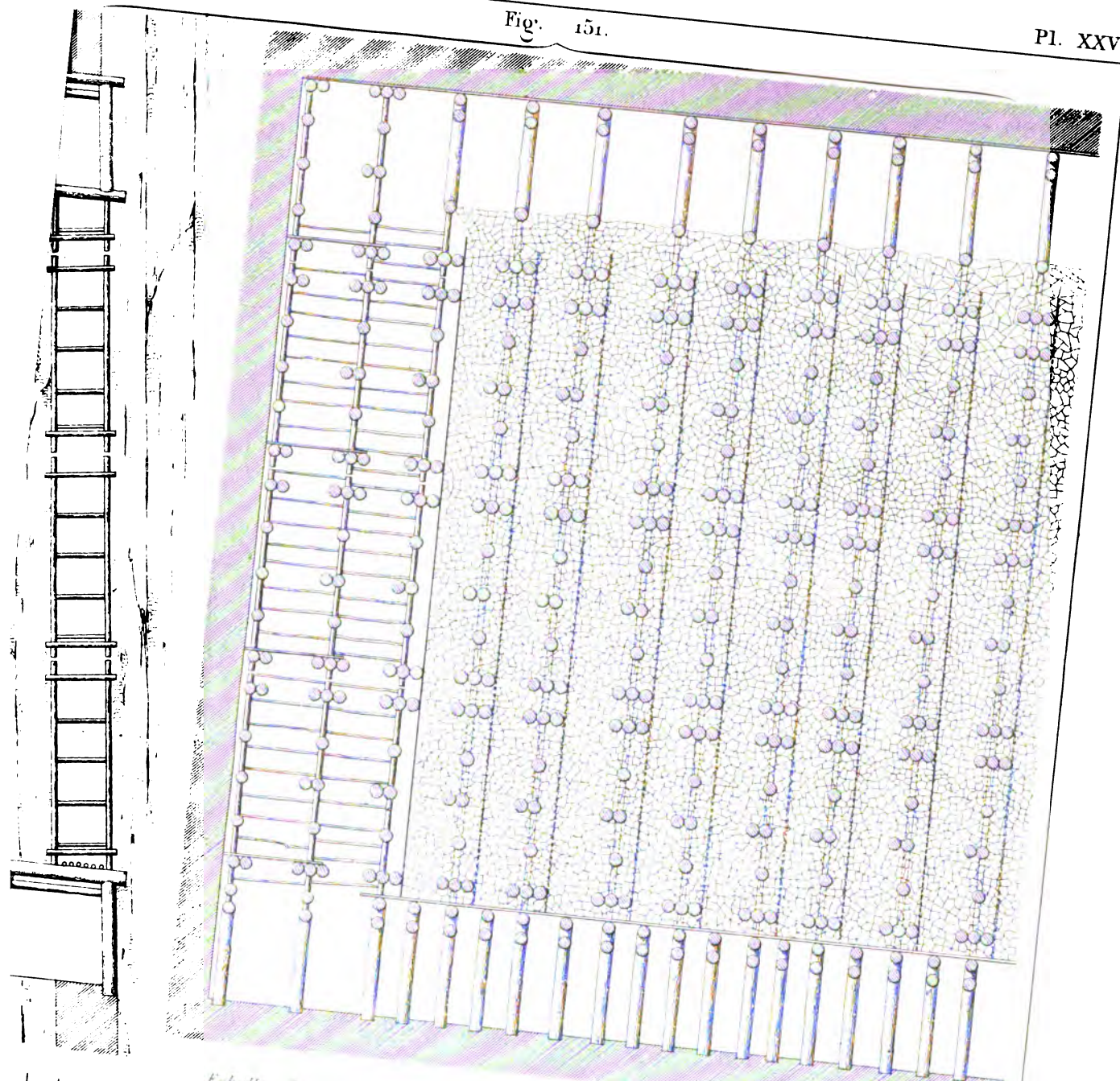


Fig. 151.

Pl. XXV.





1871

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Fig. 152.

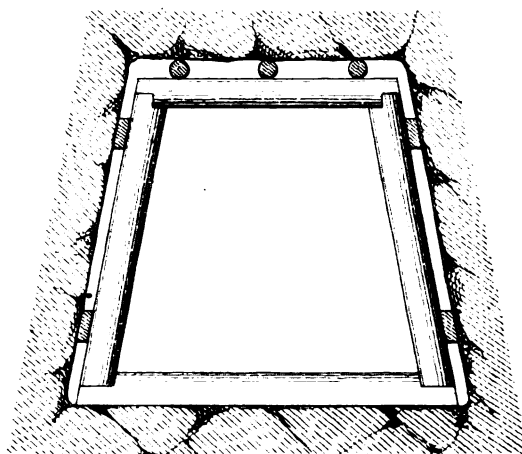


Fig. 155.

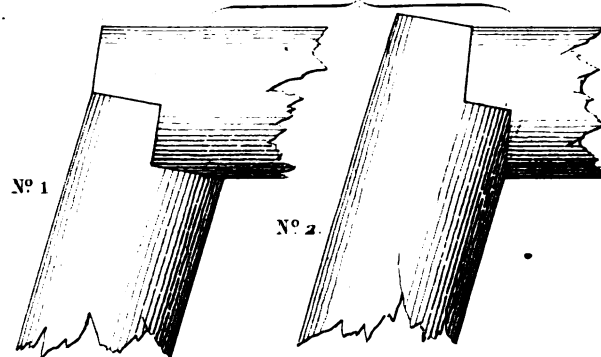
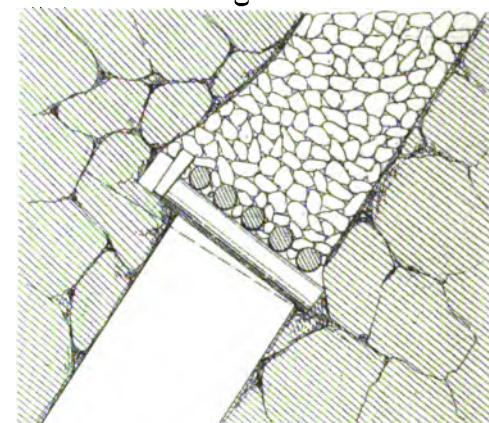
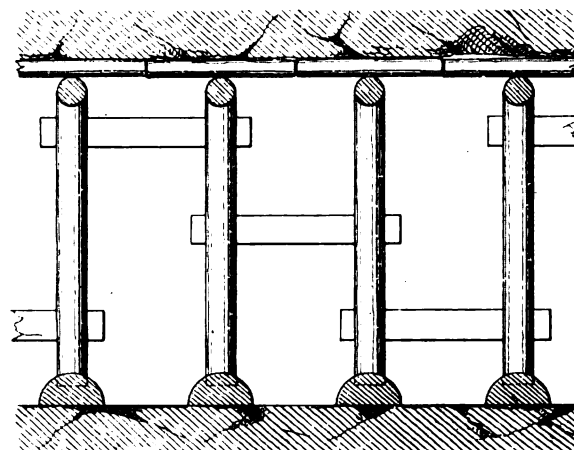
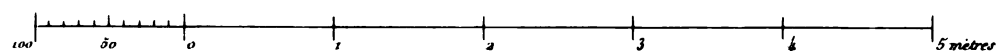


Fig. 156.



Echelle des Fig. 152 à 154, 156 à 159 de 0^m 02 pour 1 mètre



Echelle de la Fig. 155 de 0^m 10 pour 1 mètre.

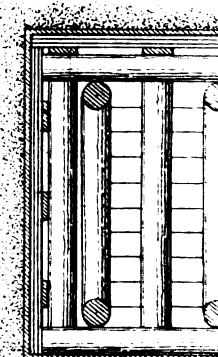
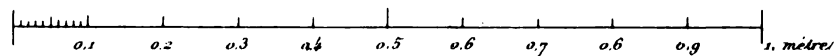


Fig. 153.

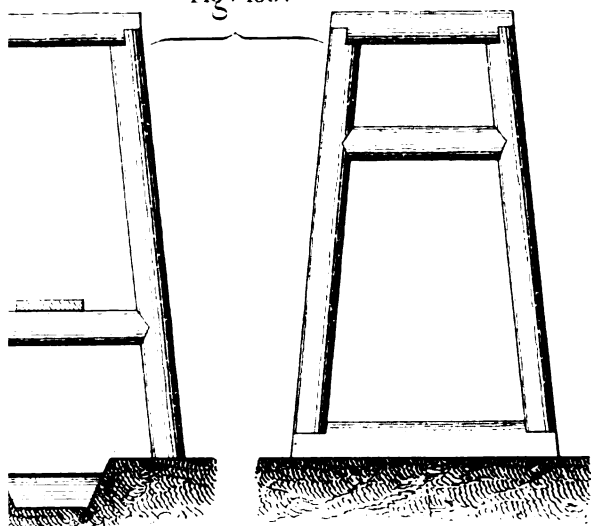


Fig. 154.

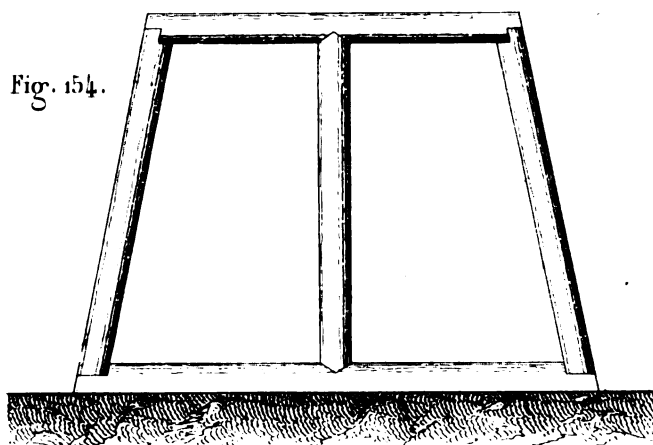


Fig. 159.

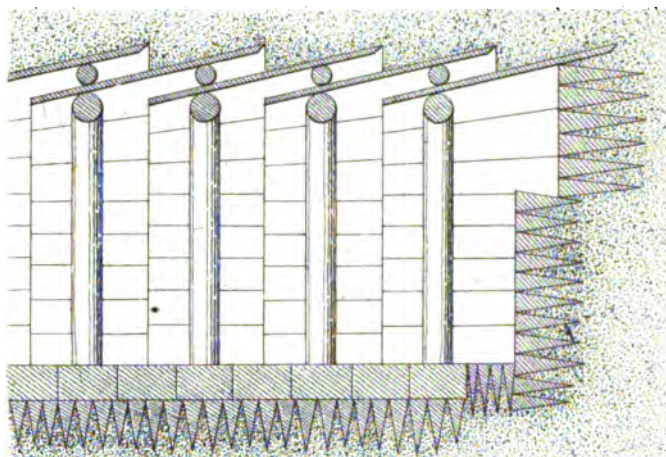


Fig. 157.

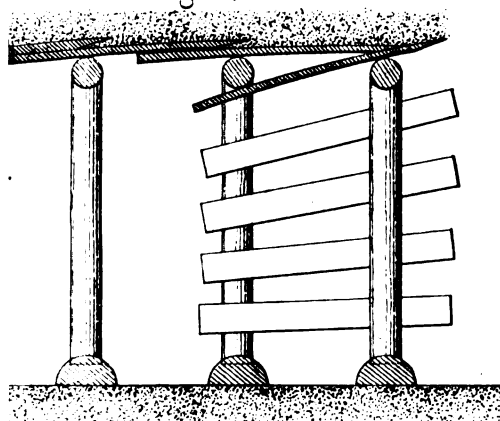


Fig. 158.

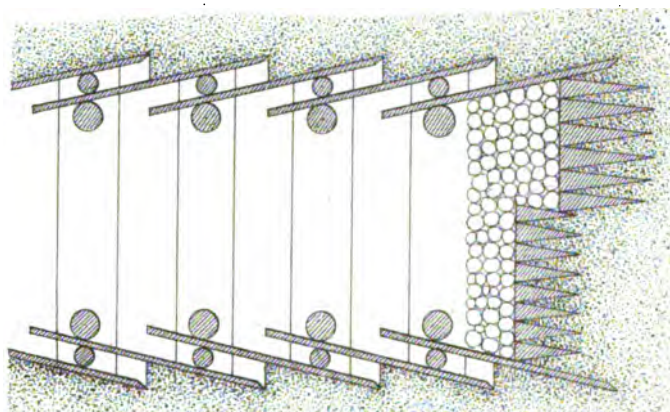
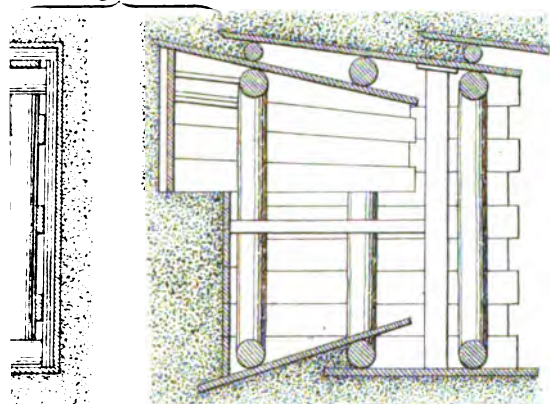


Fig. 160.

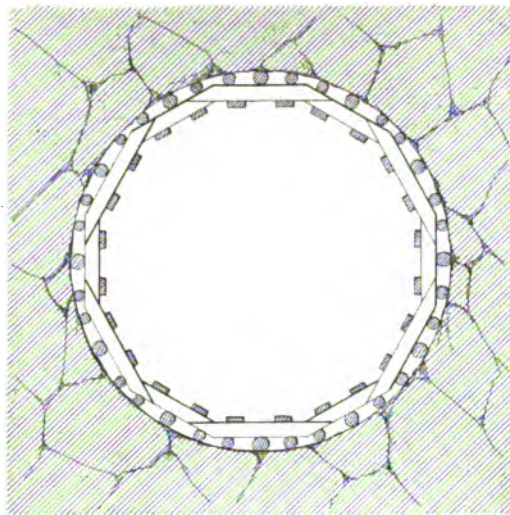


Fig. 160.

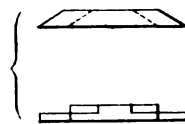


Fig. 161.

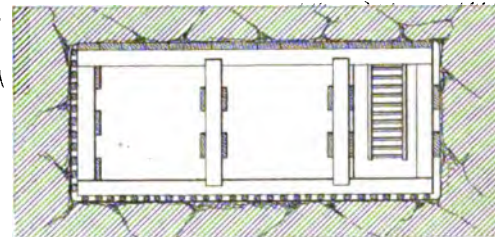
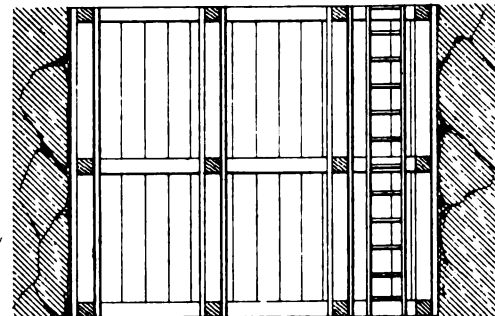


Fig. 163.

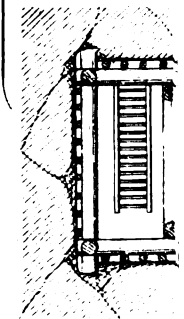
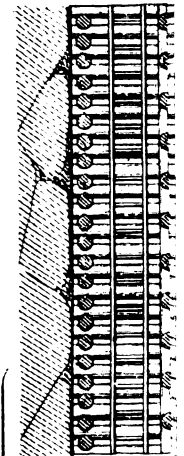
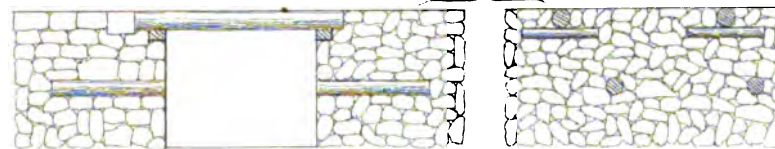
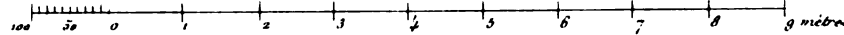


Fig. 167.

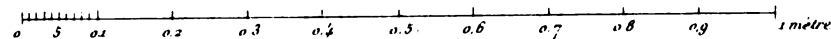
Fig. 166.



Echelle des Fig. 160 à 162, 164 à 166 de 0^m 01 pour 1 mètre



Echelle de la Fig. 163 de 0^m 10 pour 1 mètre



Echelle des Fig. 167 à 169 de 0^m 005 pour 1 mètre

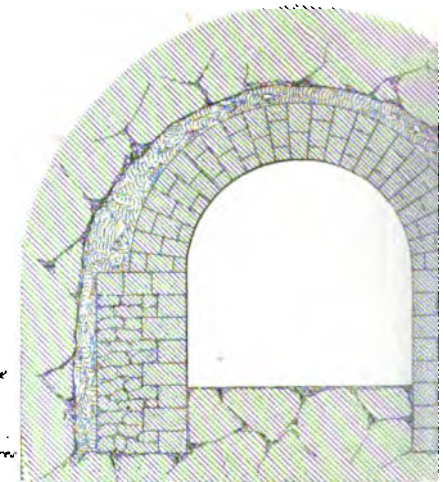
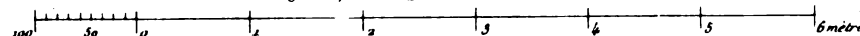


Fig. 152.

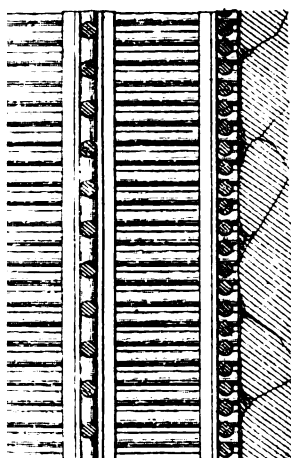


Fig. 164.

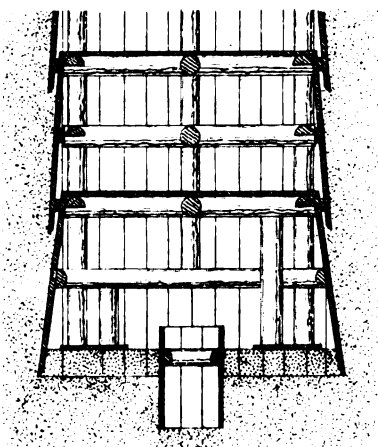


Fig. 165.

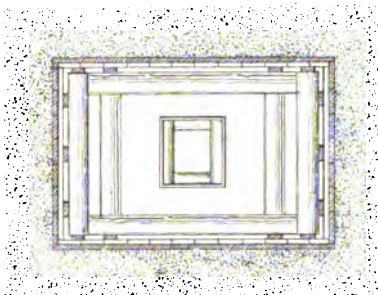
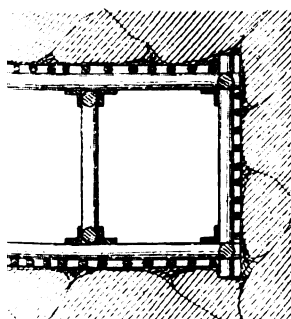
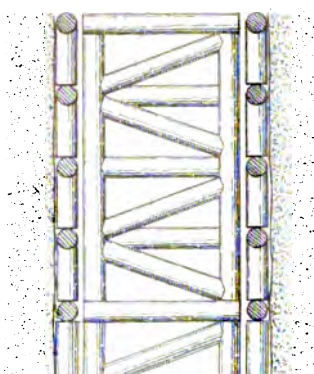


Fig. 169.

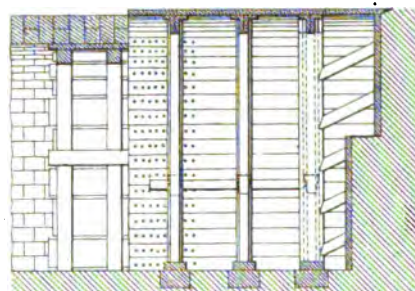


Fig. 168.

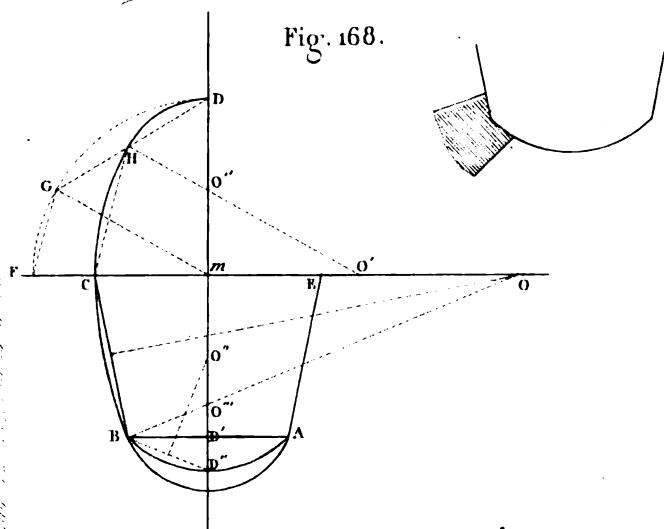


Fig. 169.

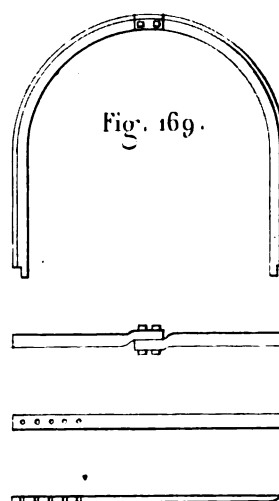


Fig. 170.

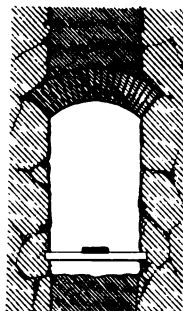


Fig. 171.

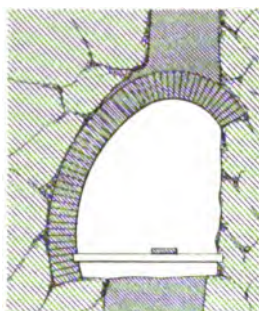


Fig. 172.

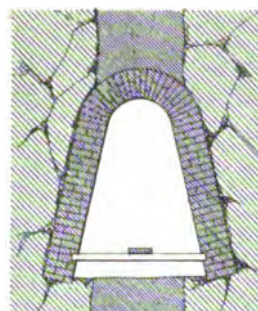


Fig. 173.

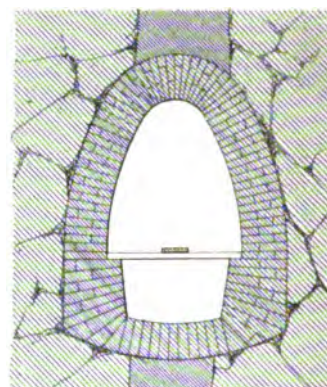


Fig. 178.

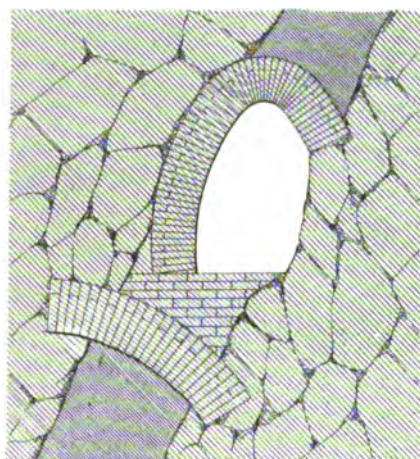


Fig. 179.

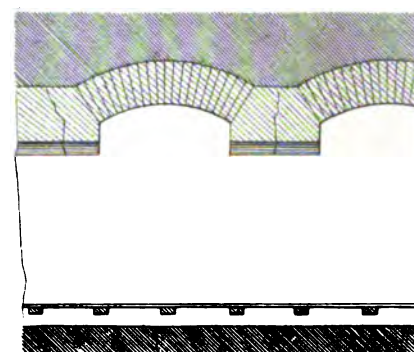
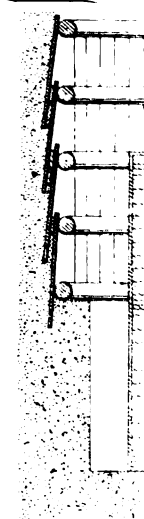
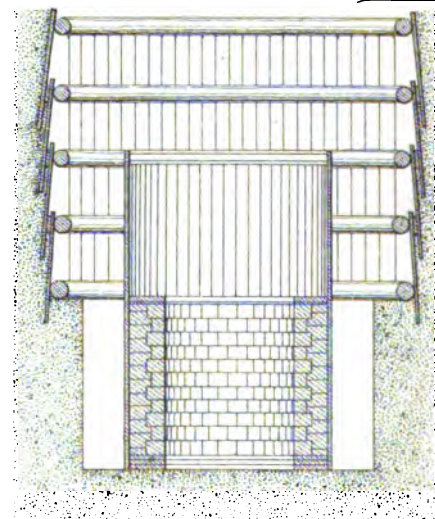
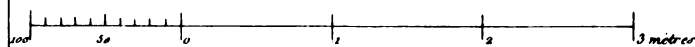


Fig. 185.



Echelle des Fig. 170 à 180 et 184 de 0^m 02 pour 1 mètre



Echelle des Fig. 181 à 183 de 0^m 01 pour 1 mètre

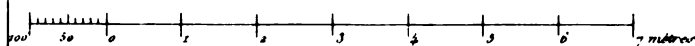


Fig. 174.

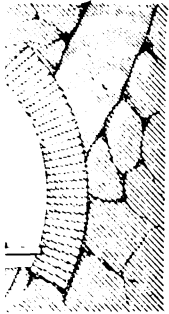


Fig. 175.

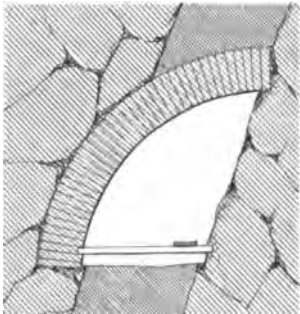


Fig. 176.

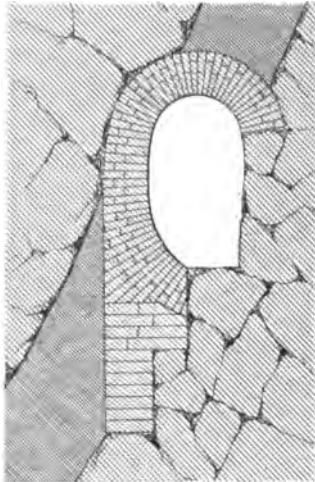


Fig. 177.

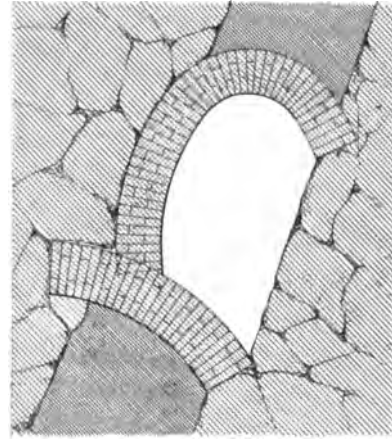


Fig. 180.

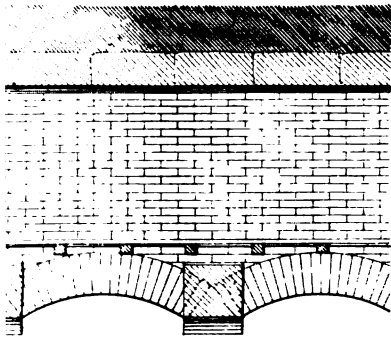


Fig. 181.

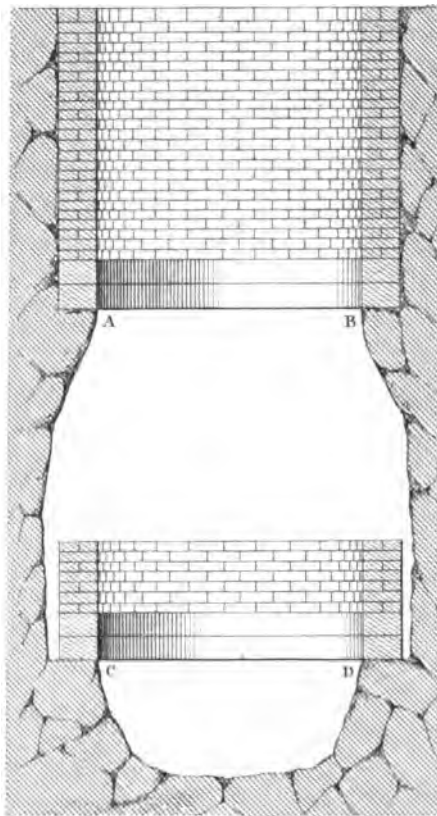


Fig. 182.

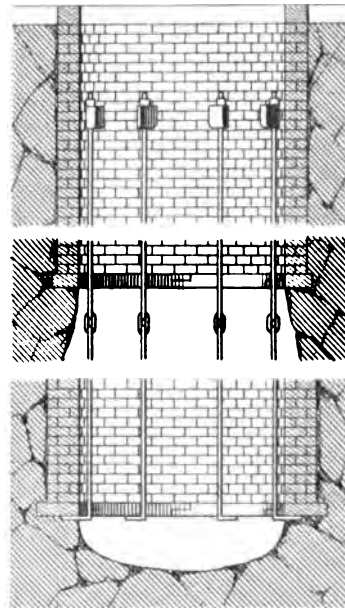


Fig. 184.

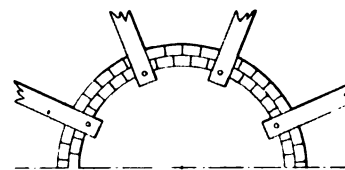
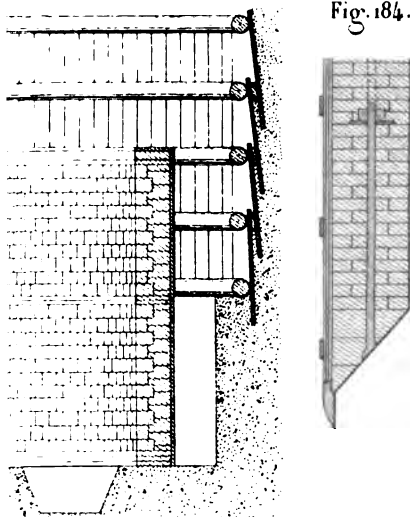




Fig. 185.

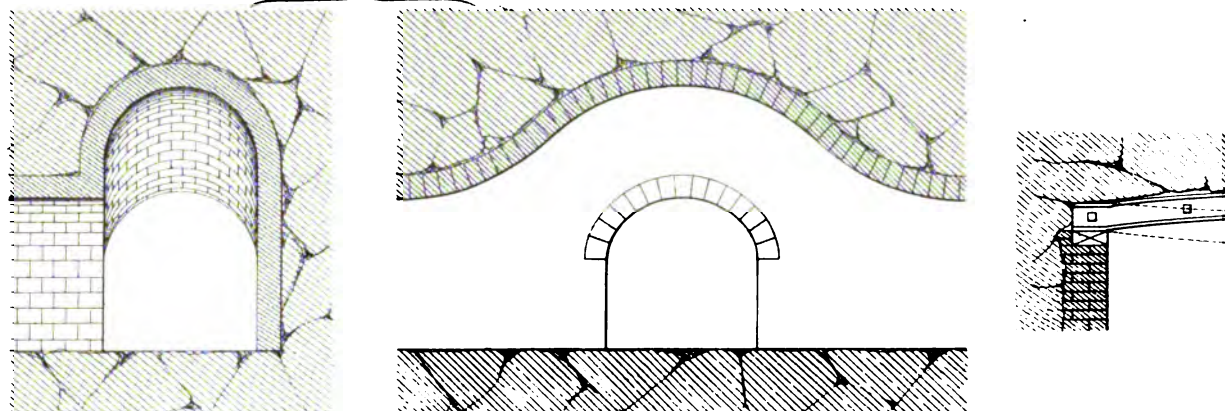


Fig. 186.

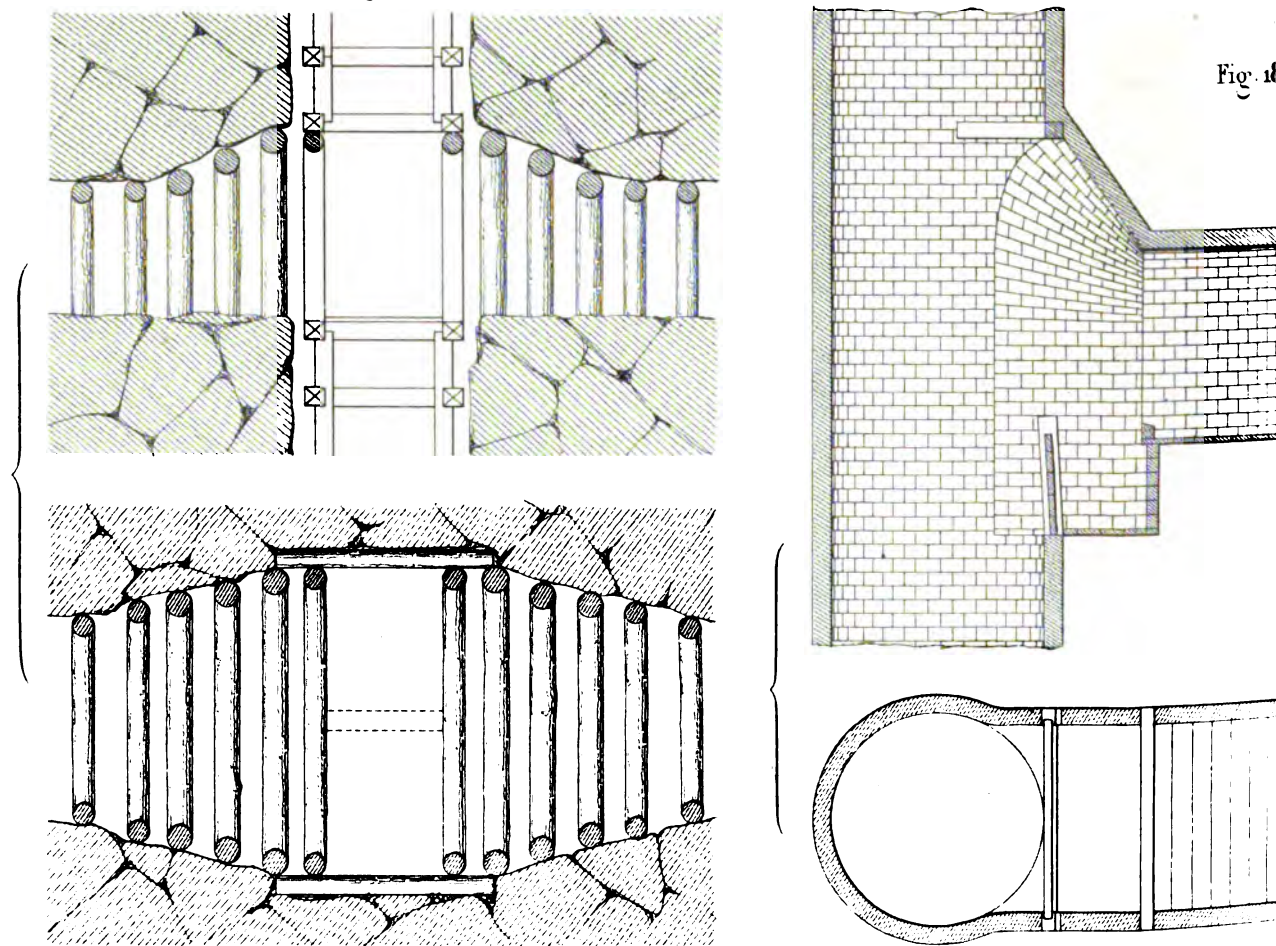


Fig. 187.

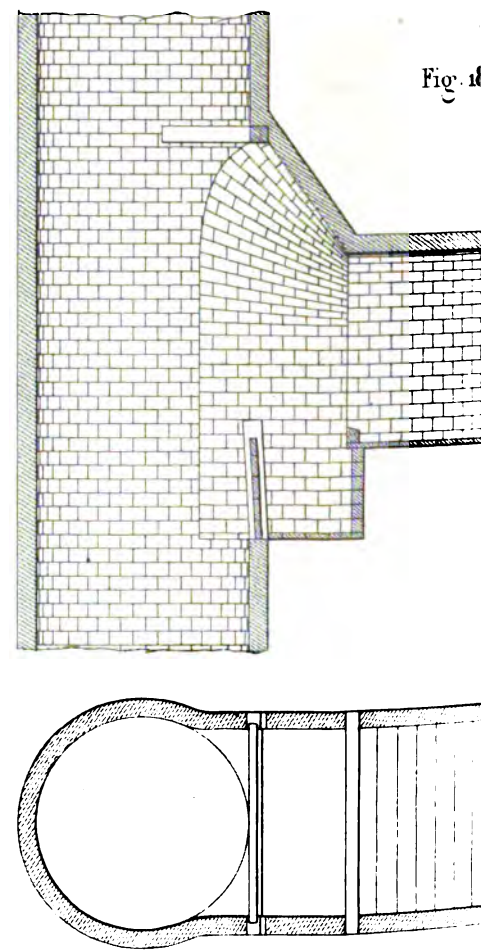


Fig. 187.

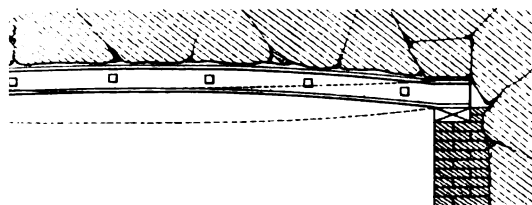


Fig. 188.

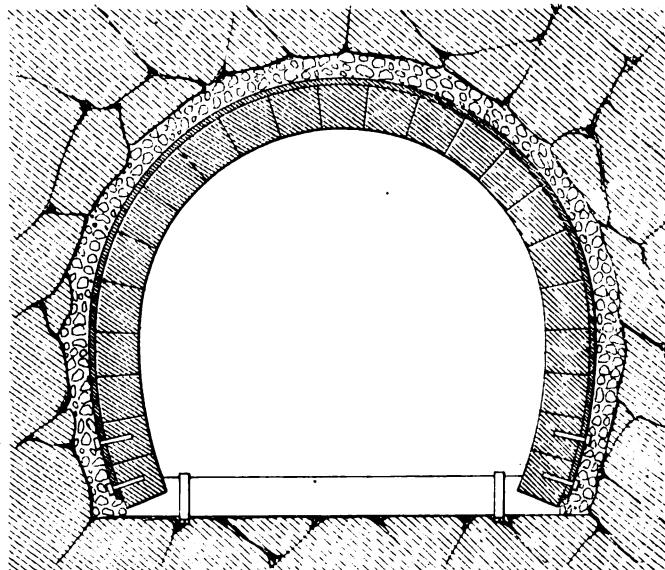
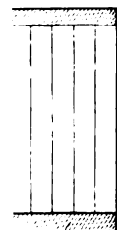
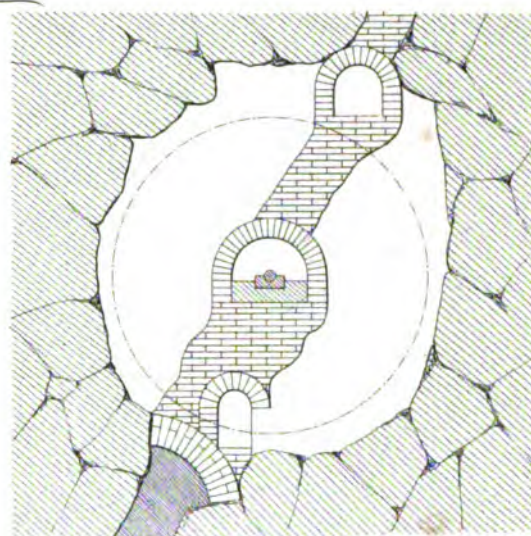
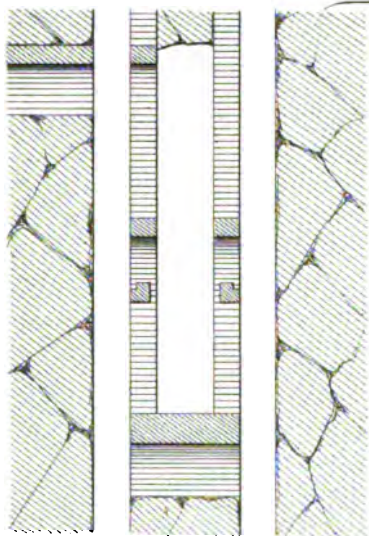
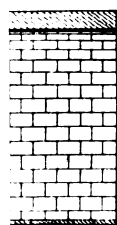
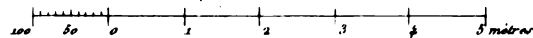


Fig. 190.



Echelle des Fig. 185, 186, 189 et 190 de 0^m 01 pour 1 mètre



Echelle des Fig 187 et 188 de 0^m 02 pour 1 mètre

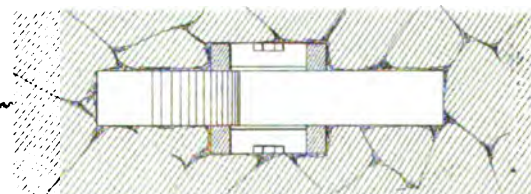


Fig. 191.

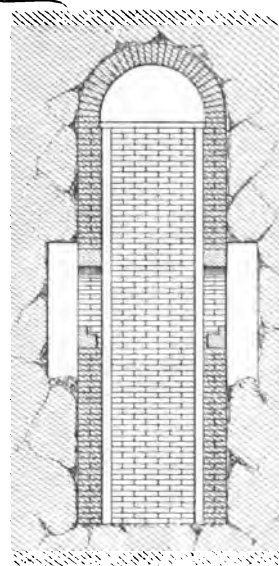
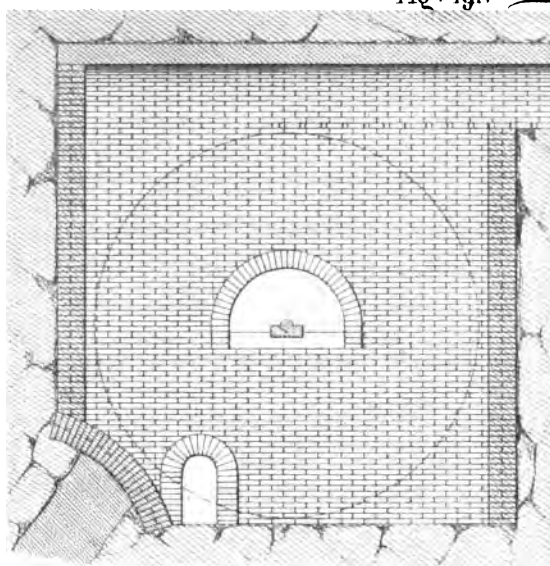


Fig. 192.

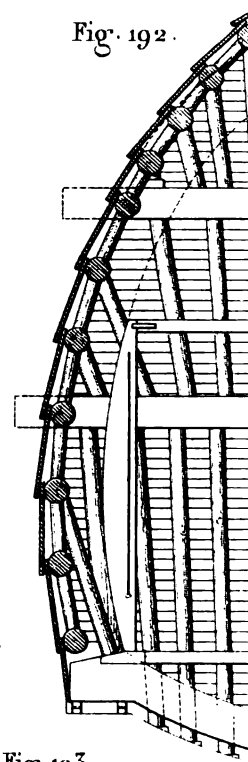


Fig. 193.

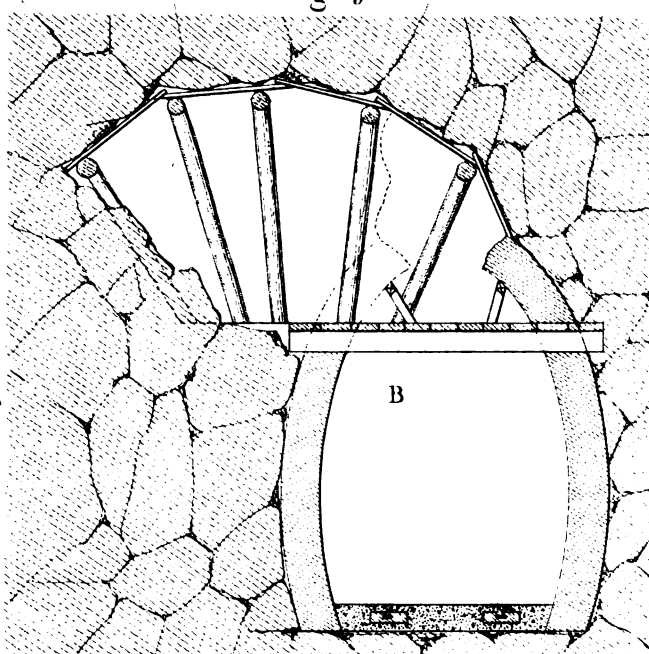
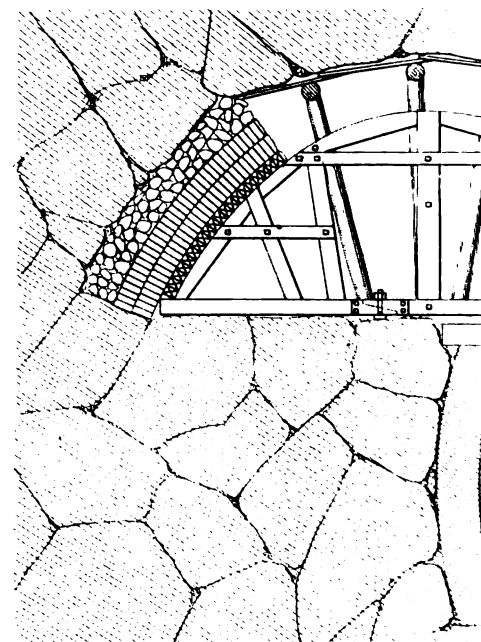


Fig. 193.



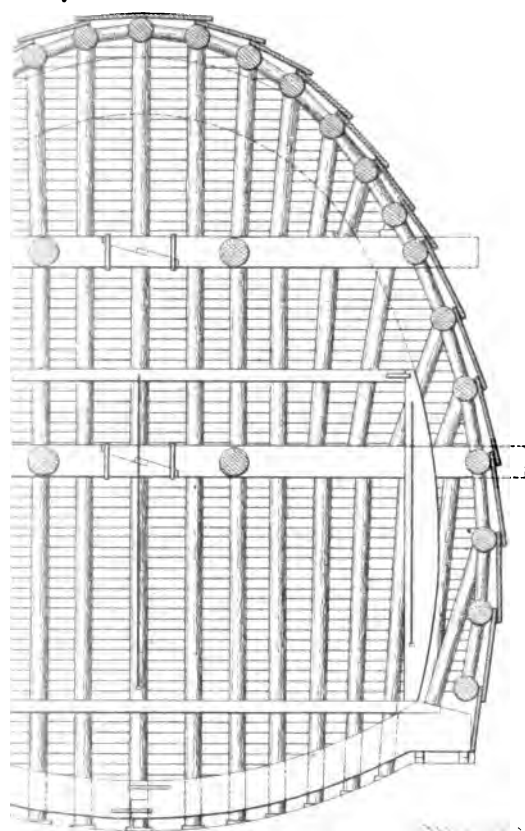
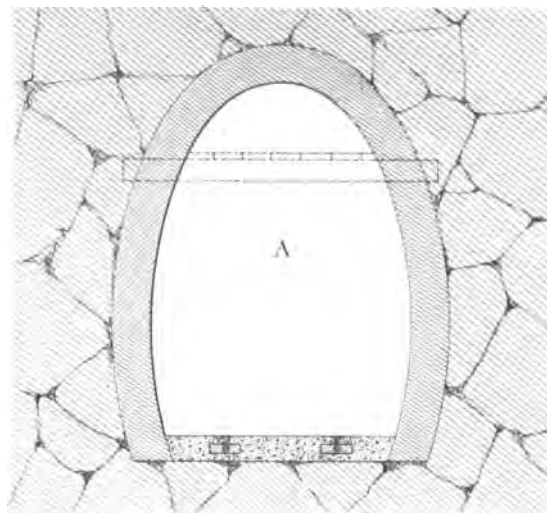


Fig. 193.



Echelle de 0^m 01 pour 1 mètre

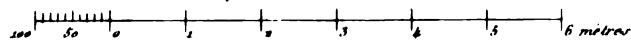
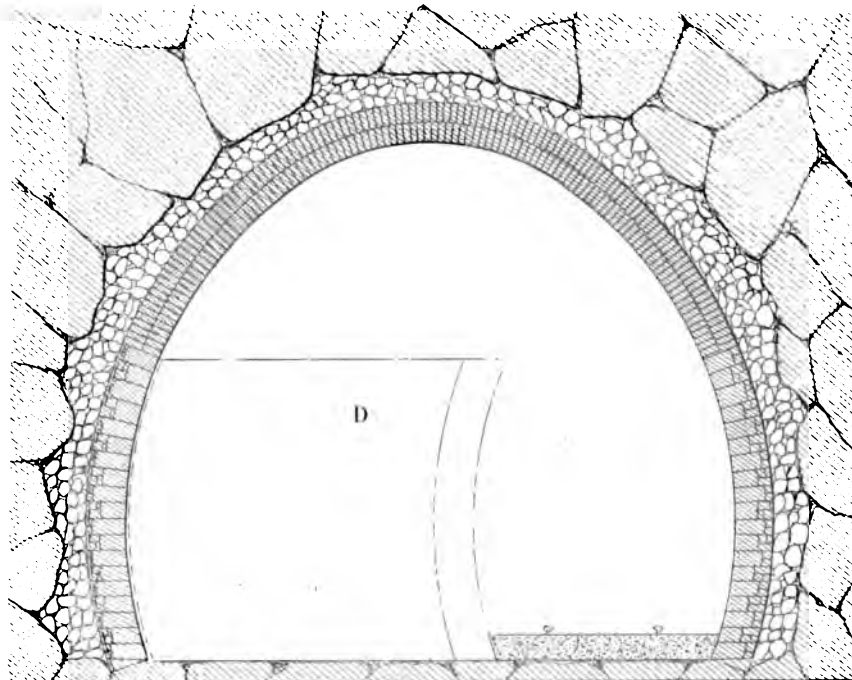
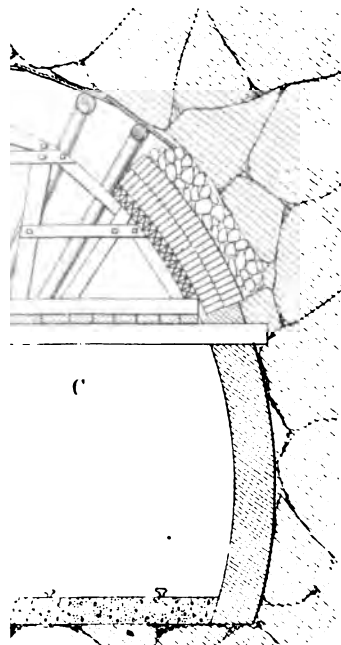


Fig. 193.



Lemaître del. et sc.

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Fig. 194.

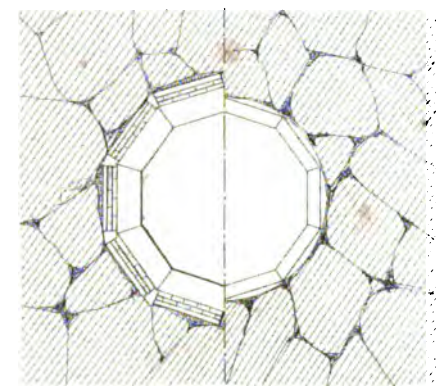
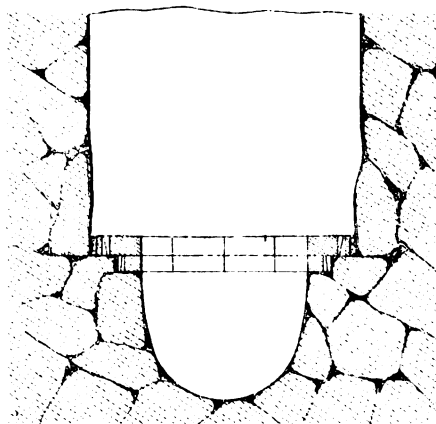
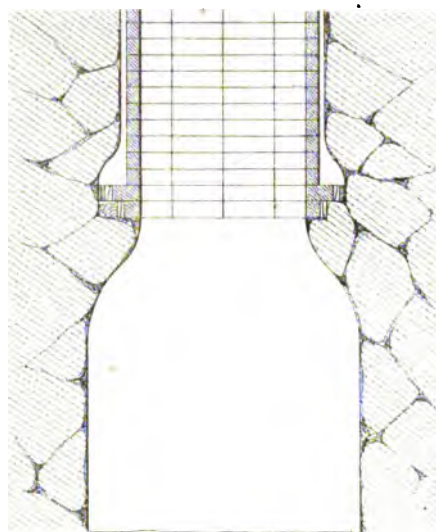


Fig. 195.

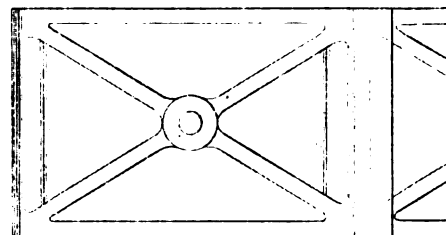
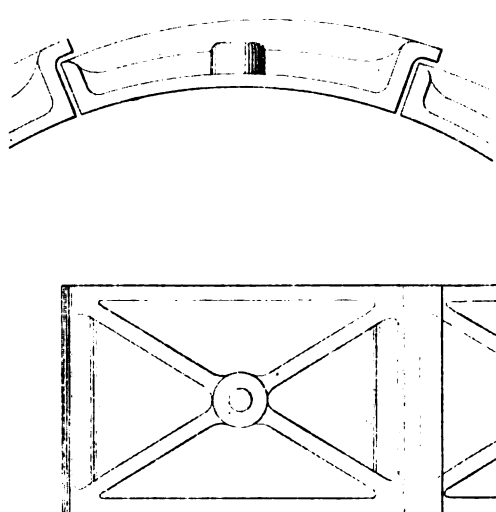


Fig. 194.

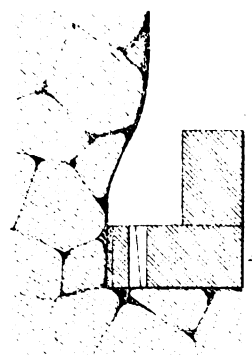
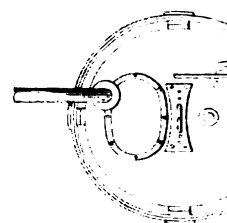
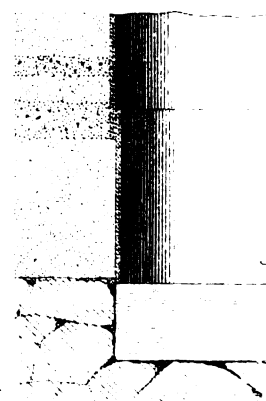
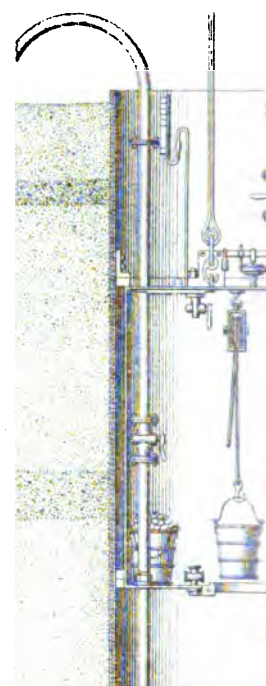
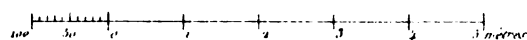


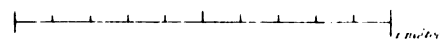
Fig. 196.



Echelle des Fig. 194 et 198 de 0^m 05 pour 1 mètre



Echelle des Fig. 194 détails et 195 de 0^m 05 p^r 1 mètre



Echelle de la Fig. 196 de 0^m 02 pour 1 mètre



Echelle de la Fig. 197 de 0^m 05 pour 1 mètre

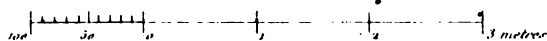


Fig. 197.

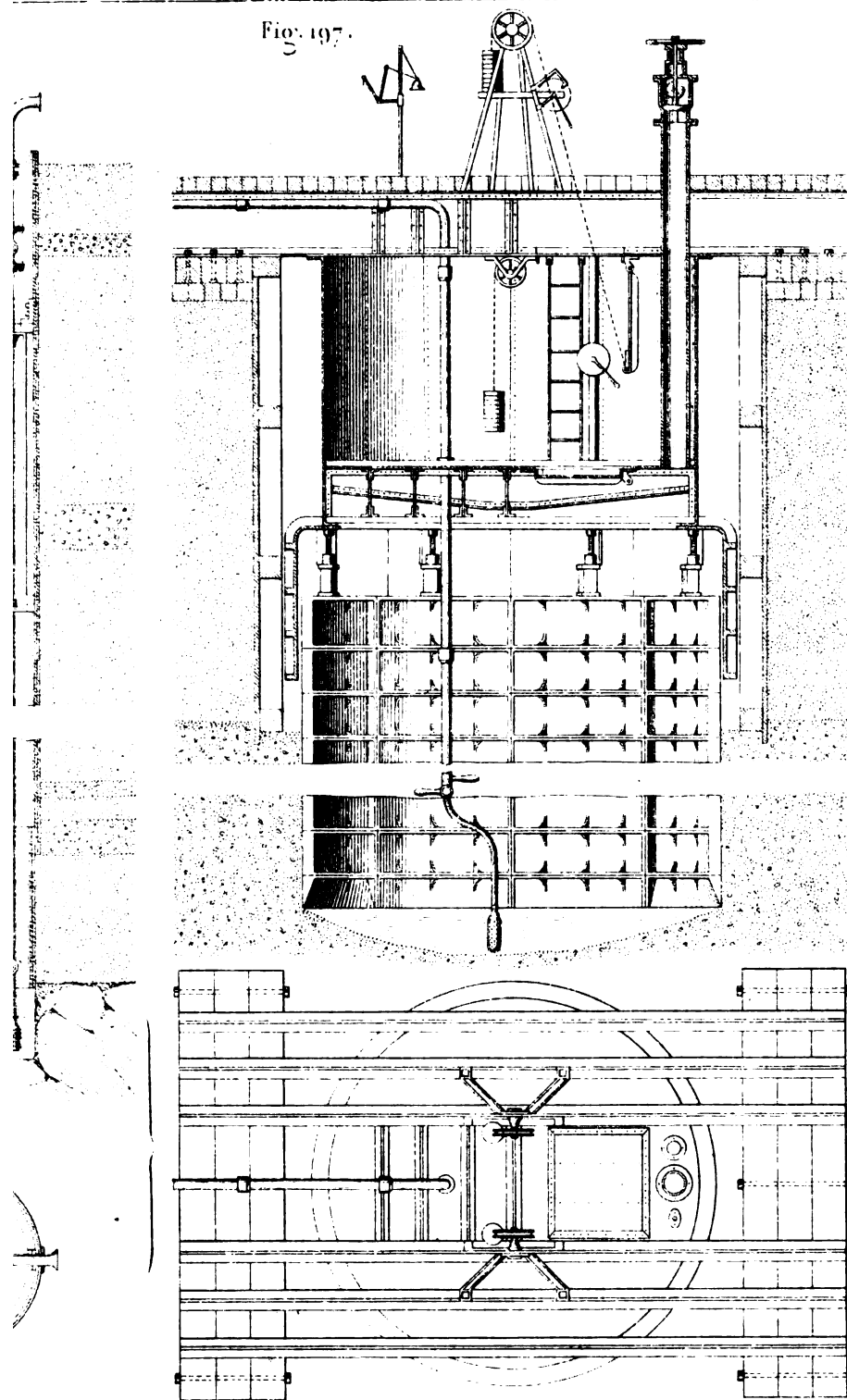


Fig. 198.

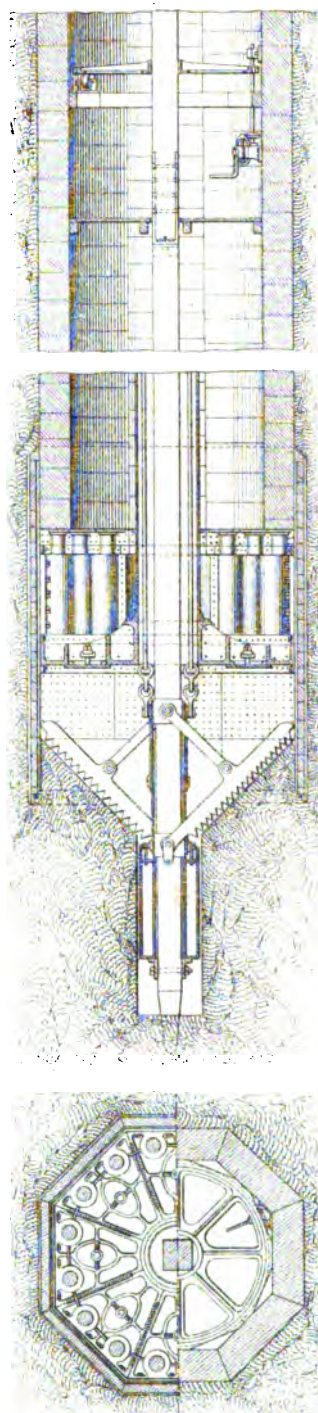




Fig. 199.

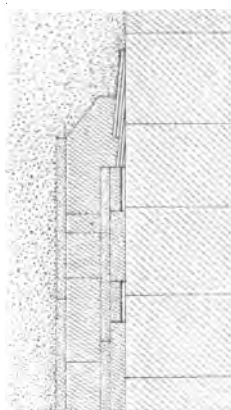


Fig. 201.

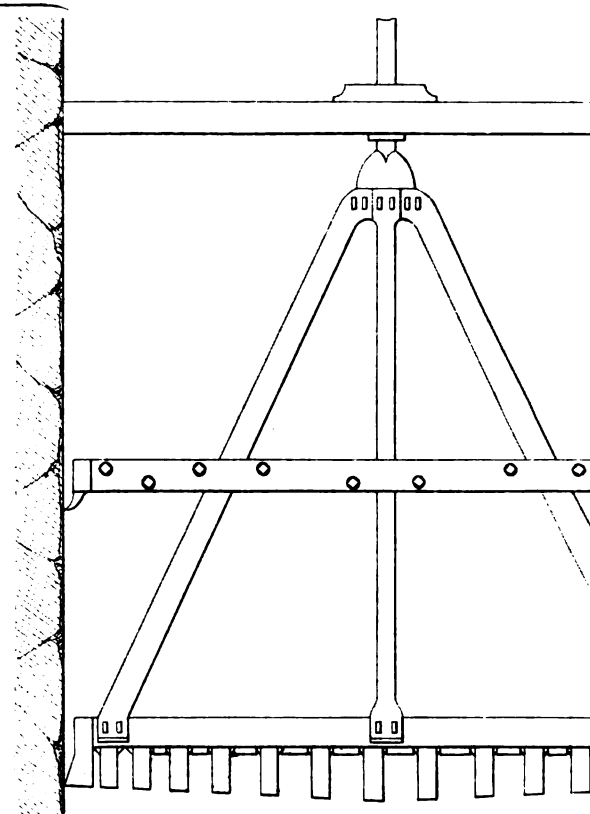


Fig. 200.

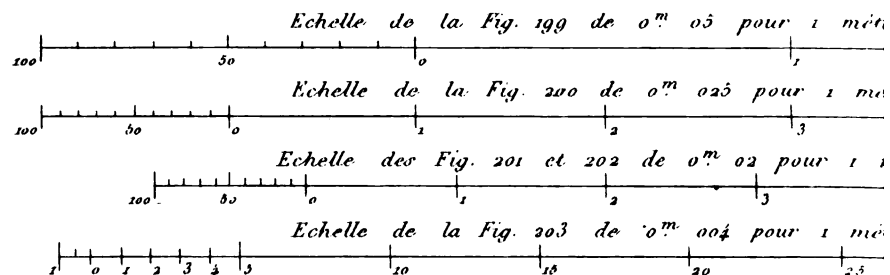
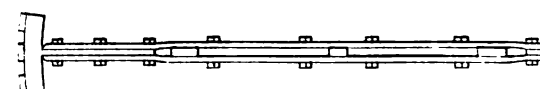
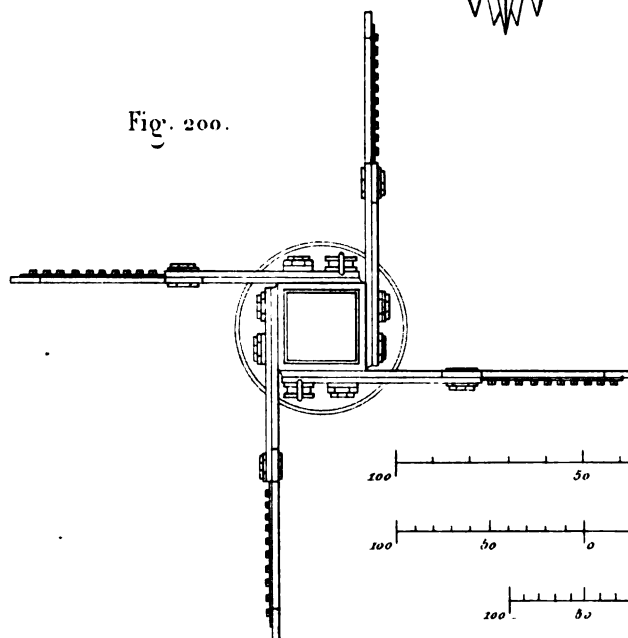


Fig. 202.

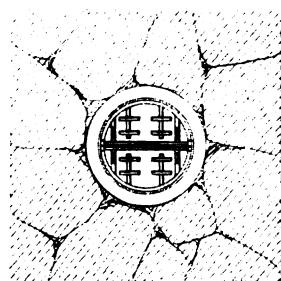
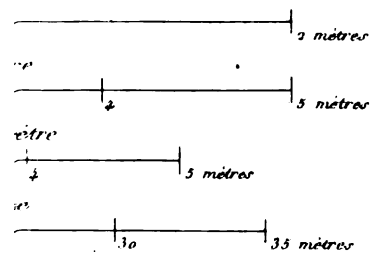
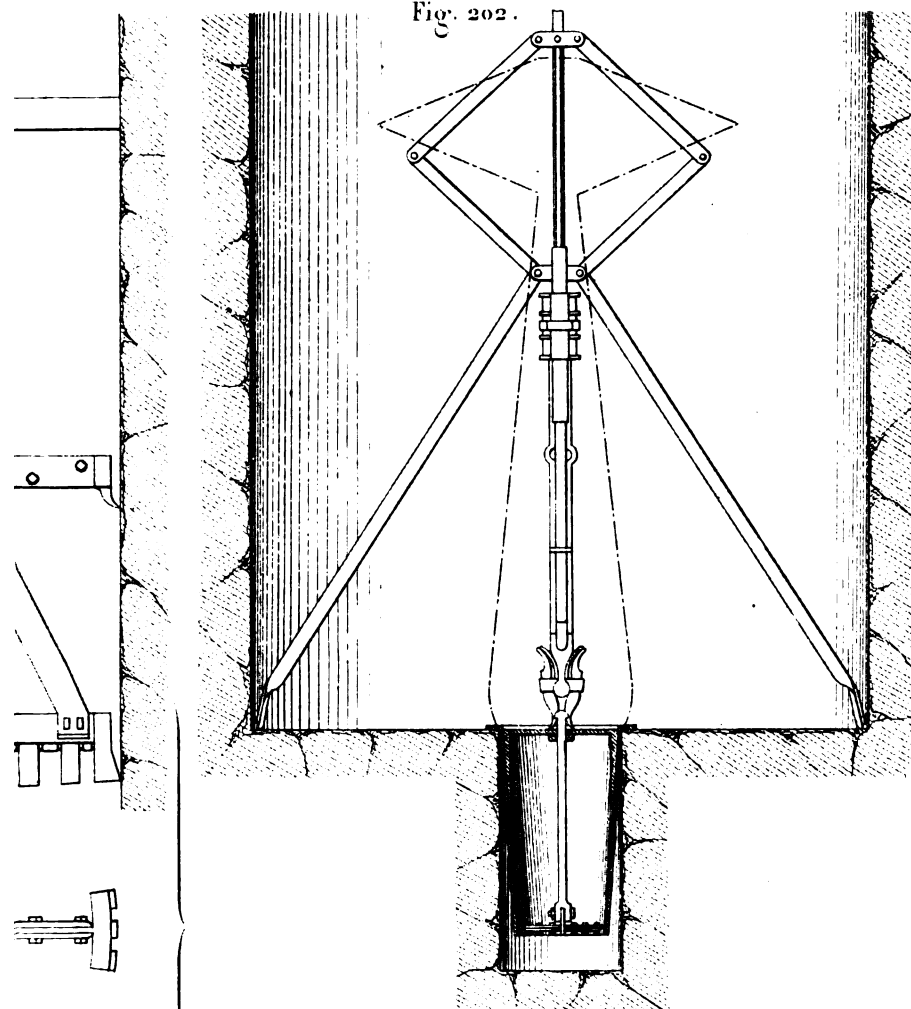
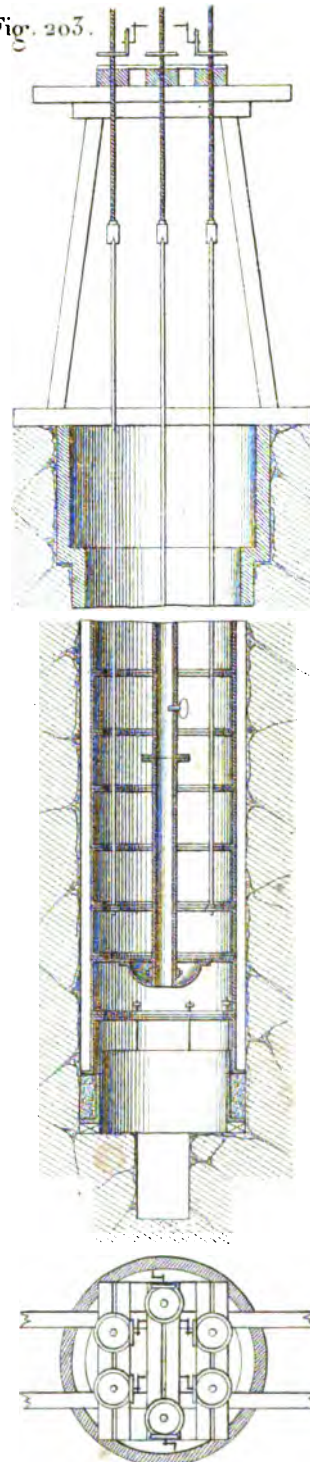


Fig. 203.



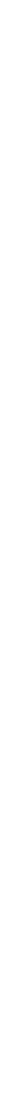


Fig. 204

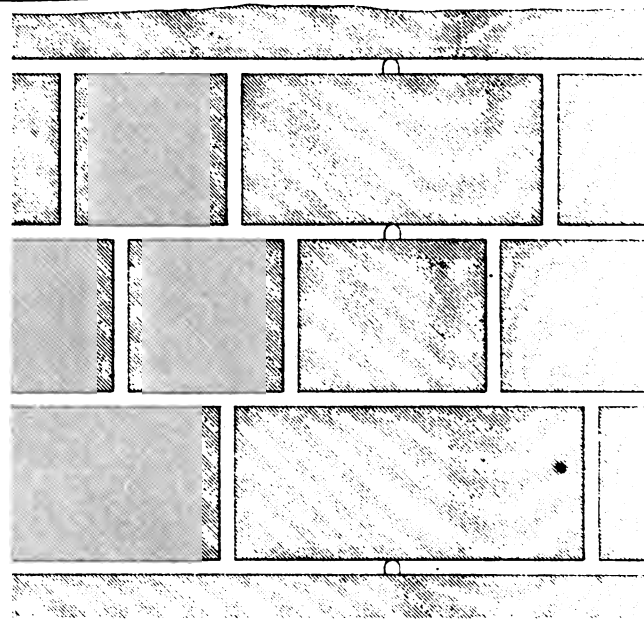
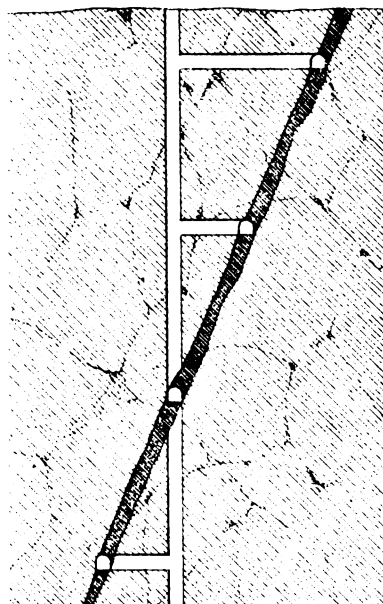
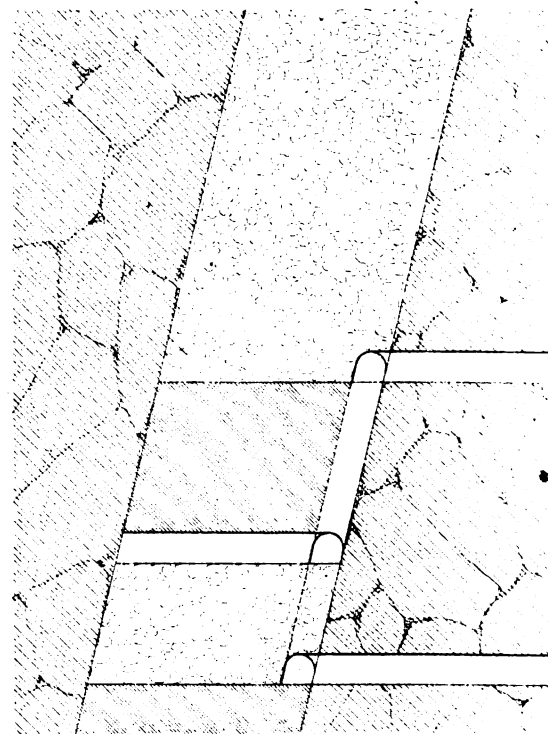
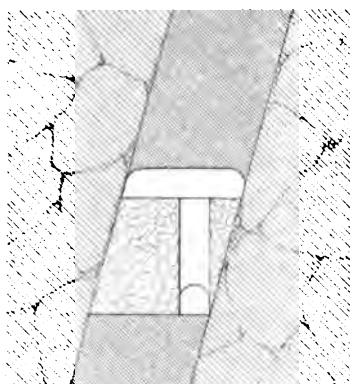


Fig. 207



Echelle des fig. 204 à 206. de 0^m 001 pour 1 mètre

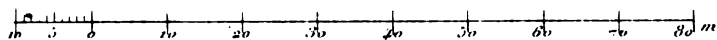


Fig. 205

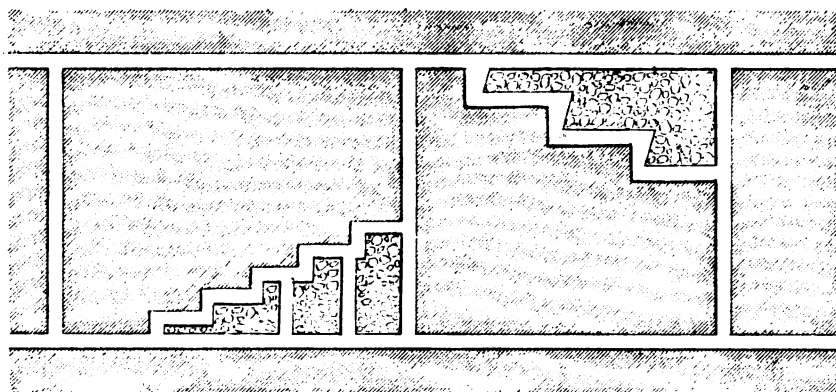


Fig. 206

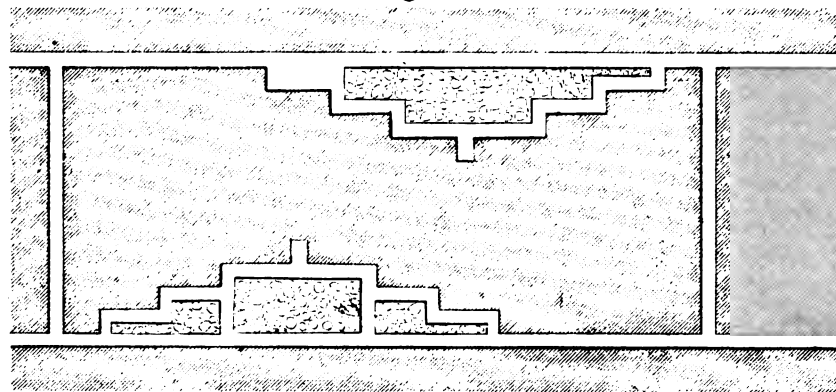
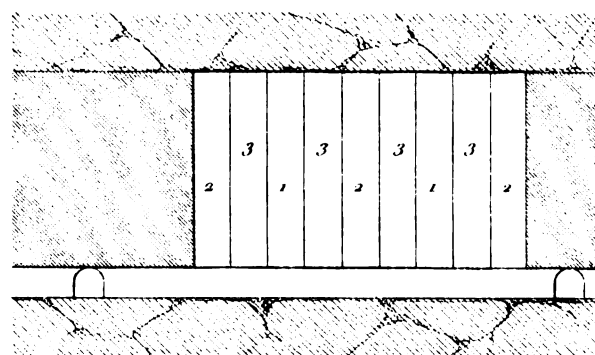


Fig. 208



Echelle des fig. 207 et 208, de 0^m.002 pour 1 metre

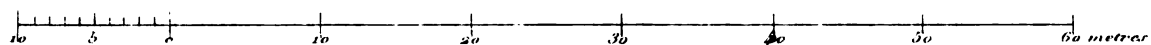


Fig. 209.

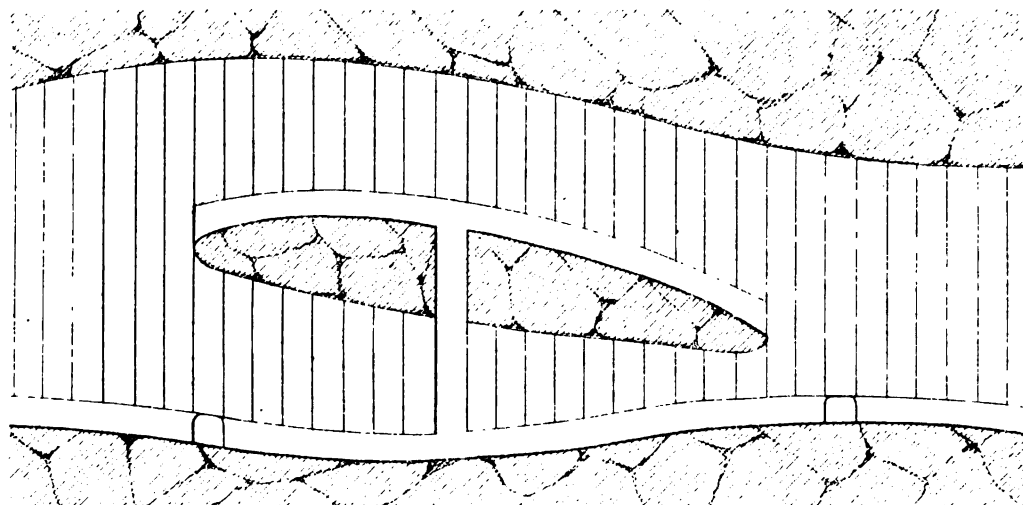
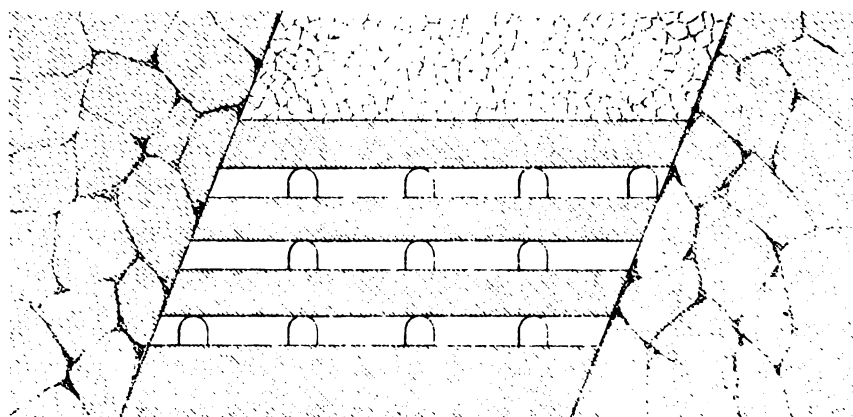


Fig. 211.



Echelle de la figure
de 0^m 004 pour 1 m

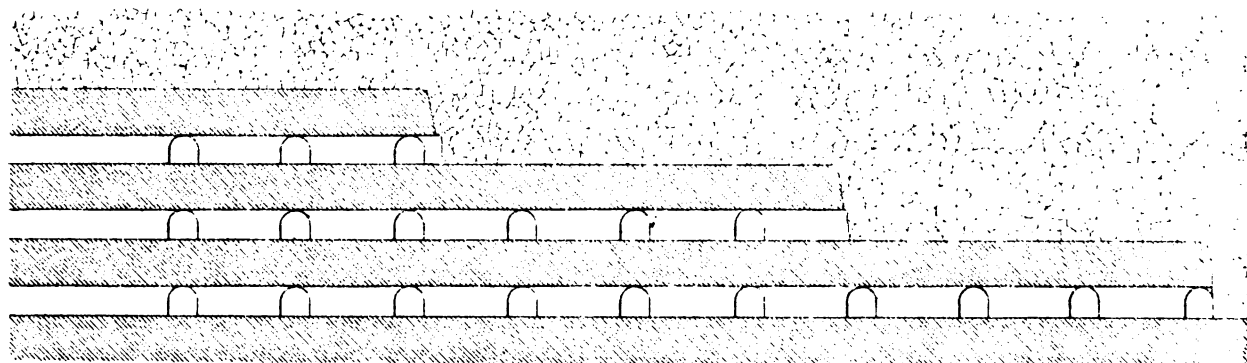
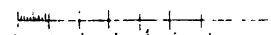


Fig. 210.

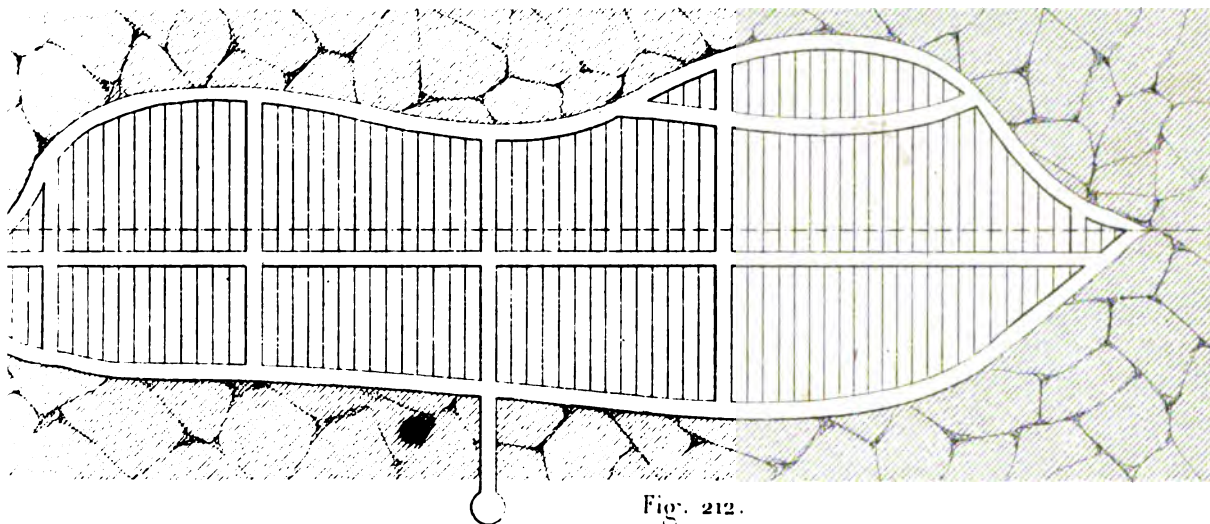
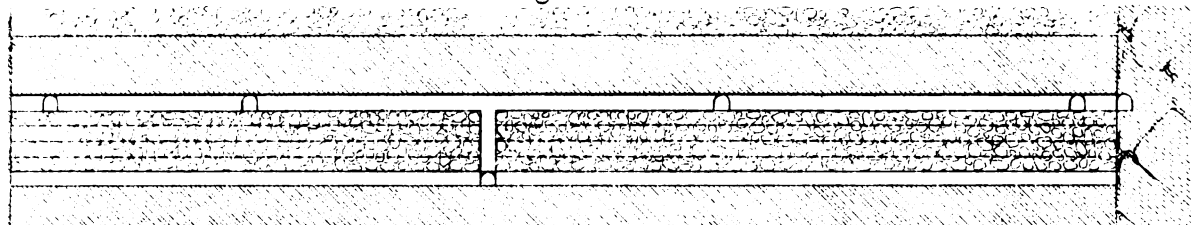
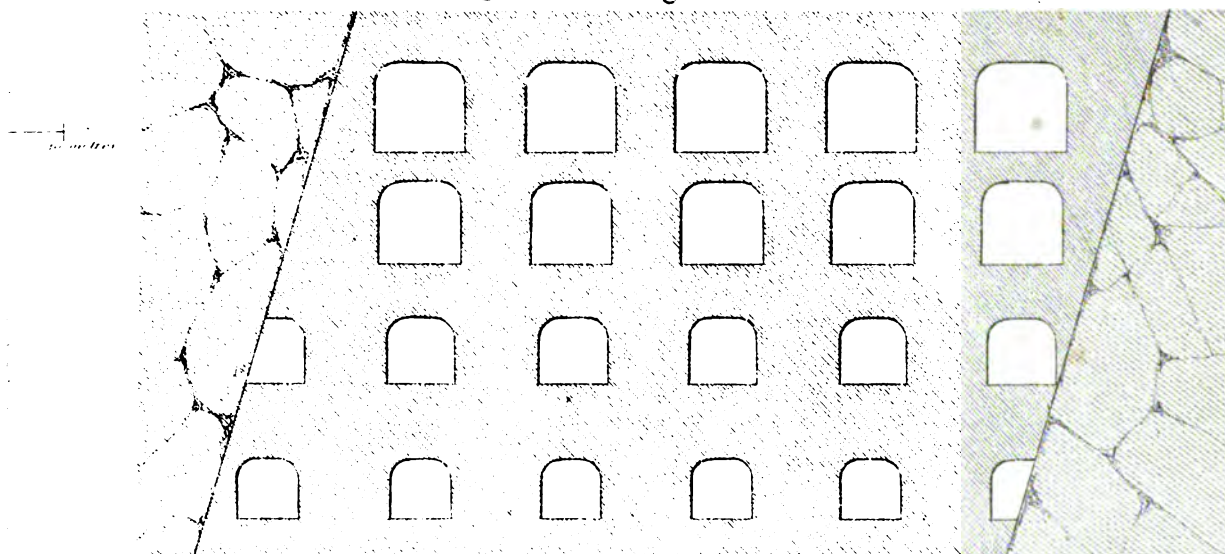


Fig. 212.

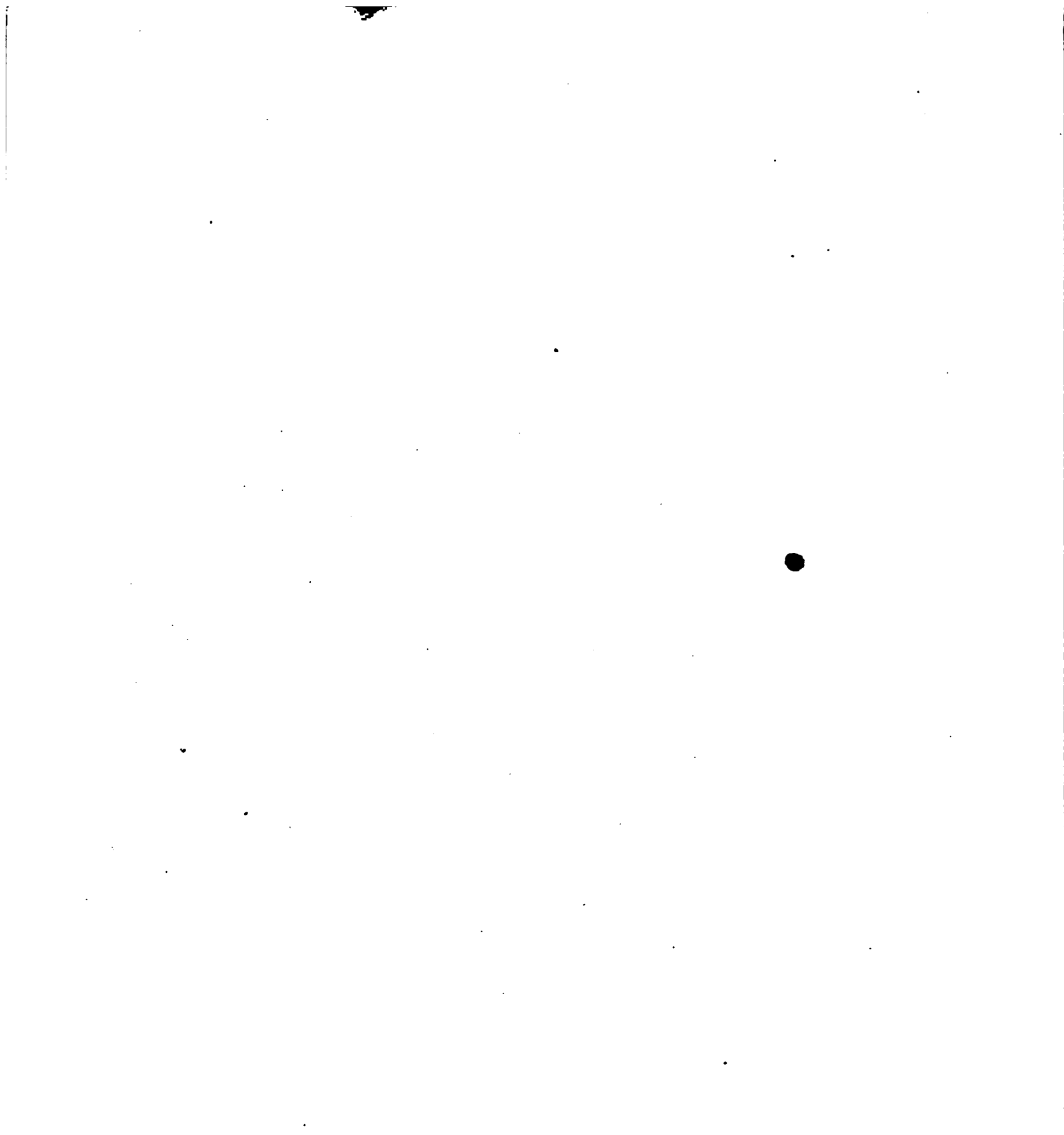


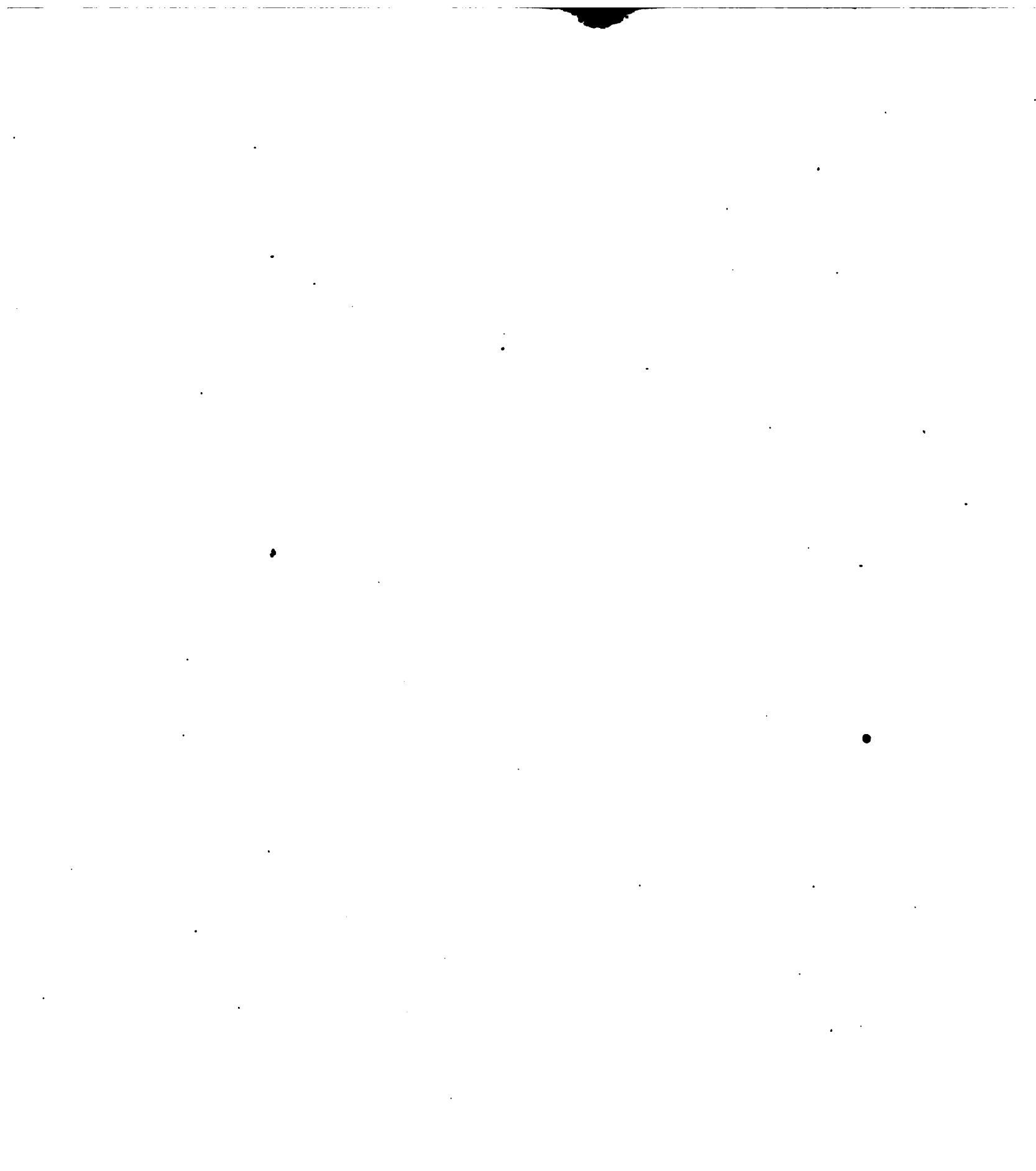
Echelle des Fig. 209 et 211 de 0^m 02 pour 1 mètre

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 mètres

Echelle de la Fig. 210 de 0^m 001 pour 1 mètre

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 mètres





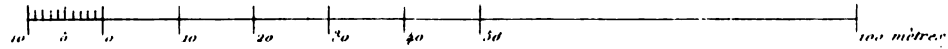
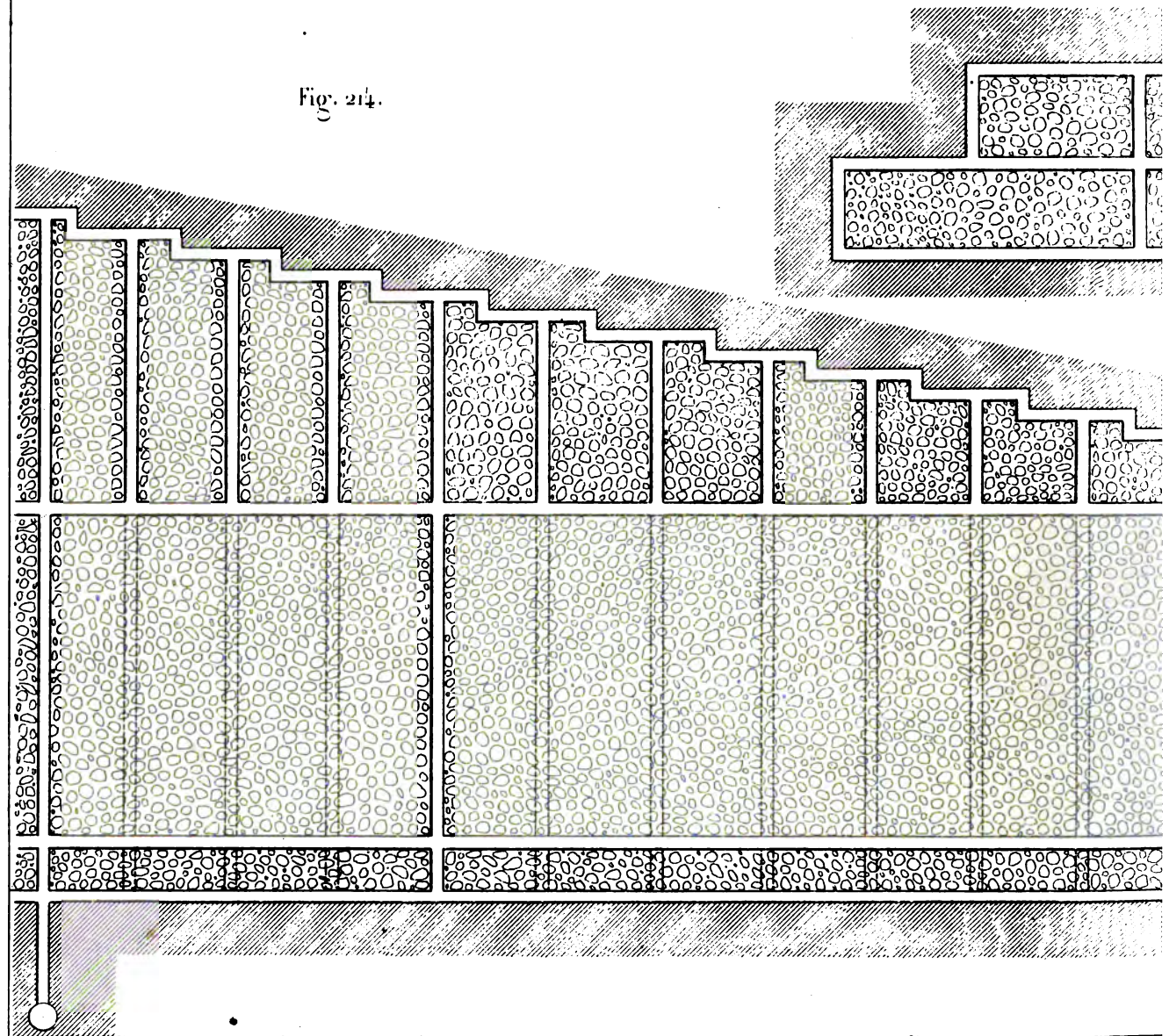
Echelle de 0^m 001 pour 1 mètre

Fig. 214.



215.

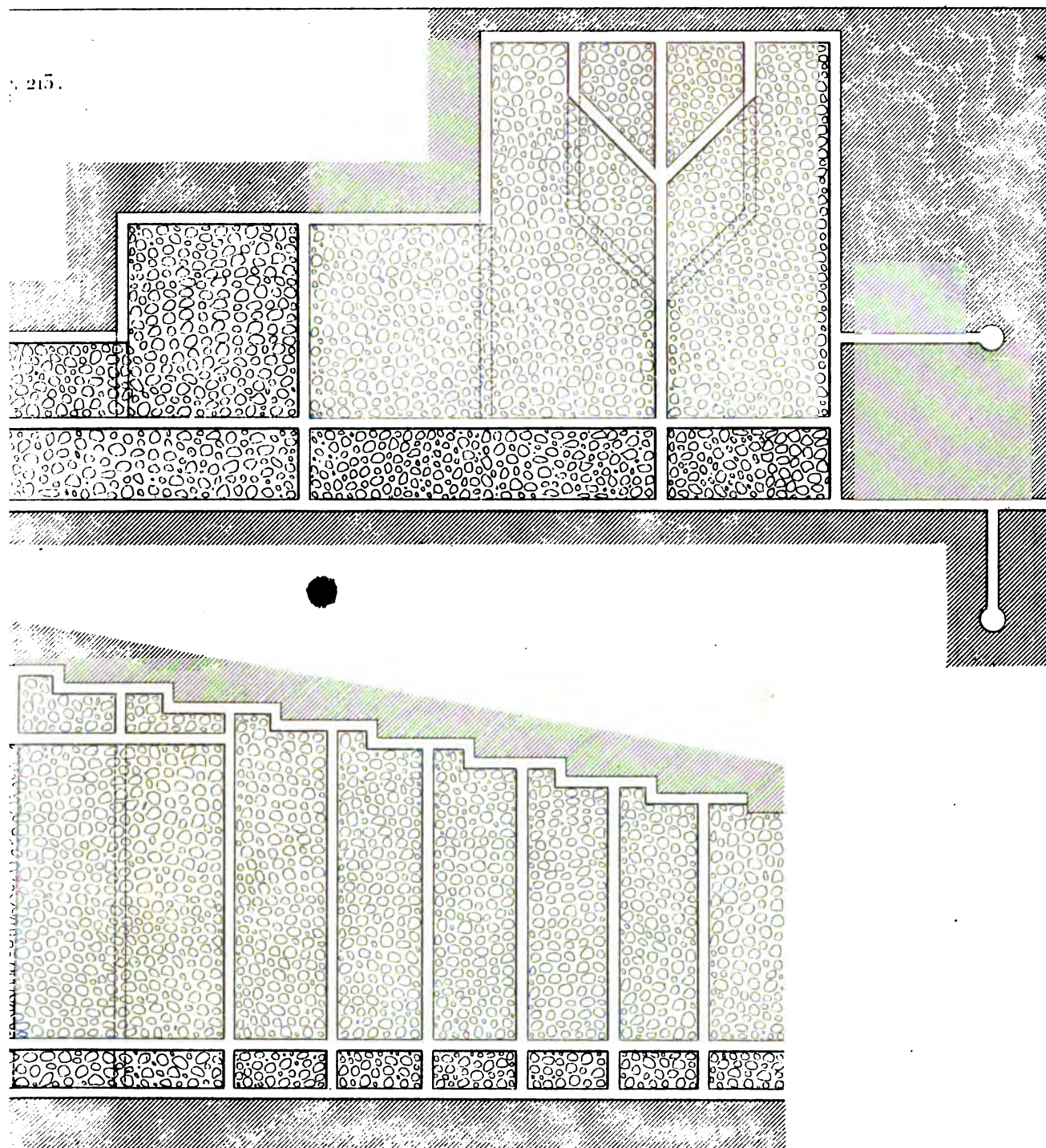


Fig. 215.

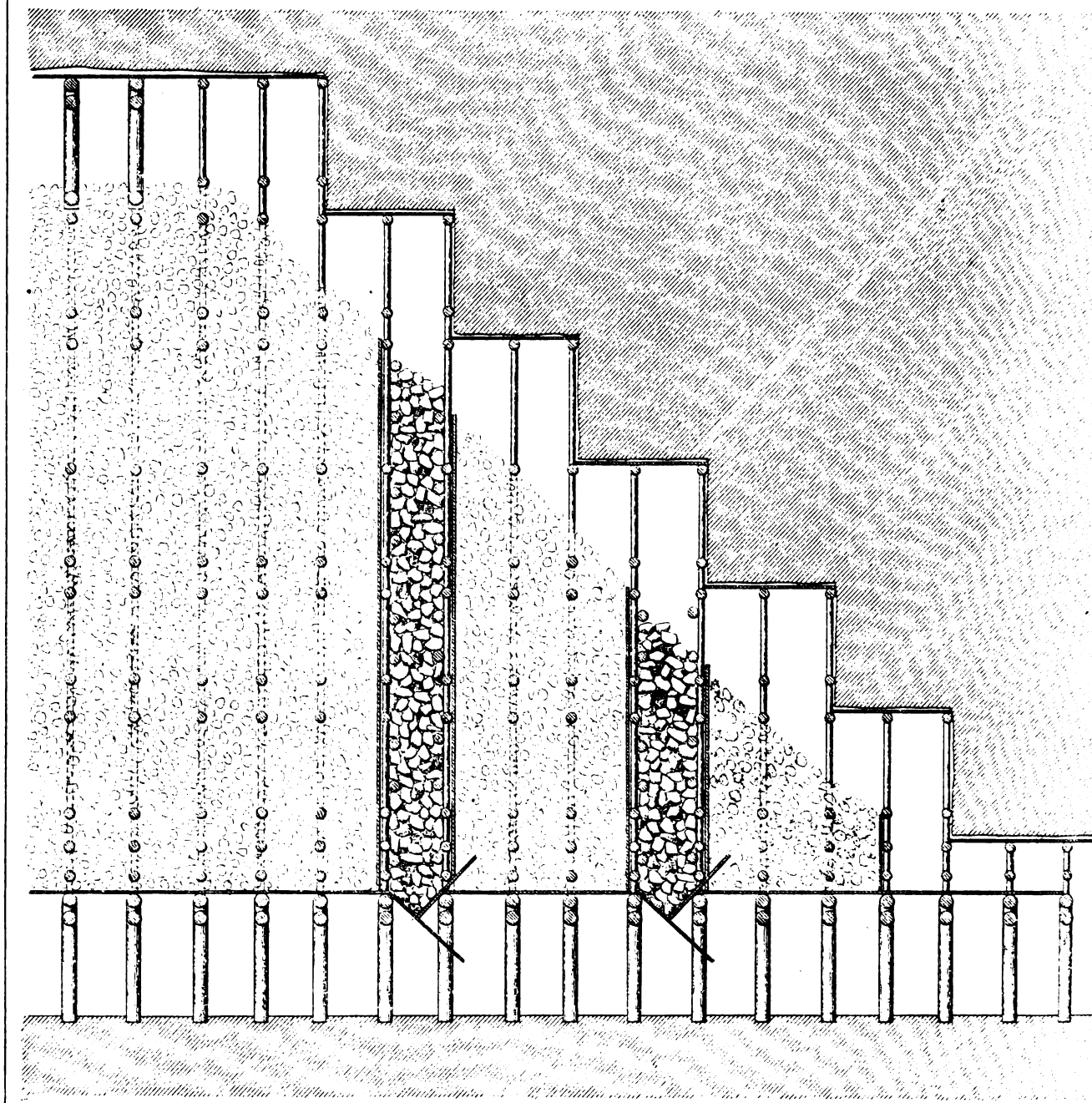
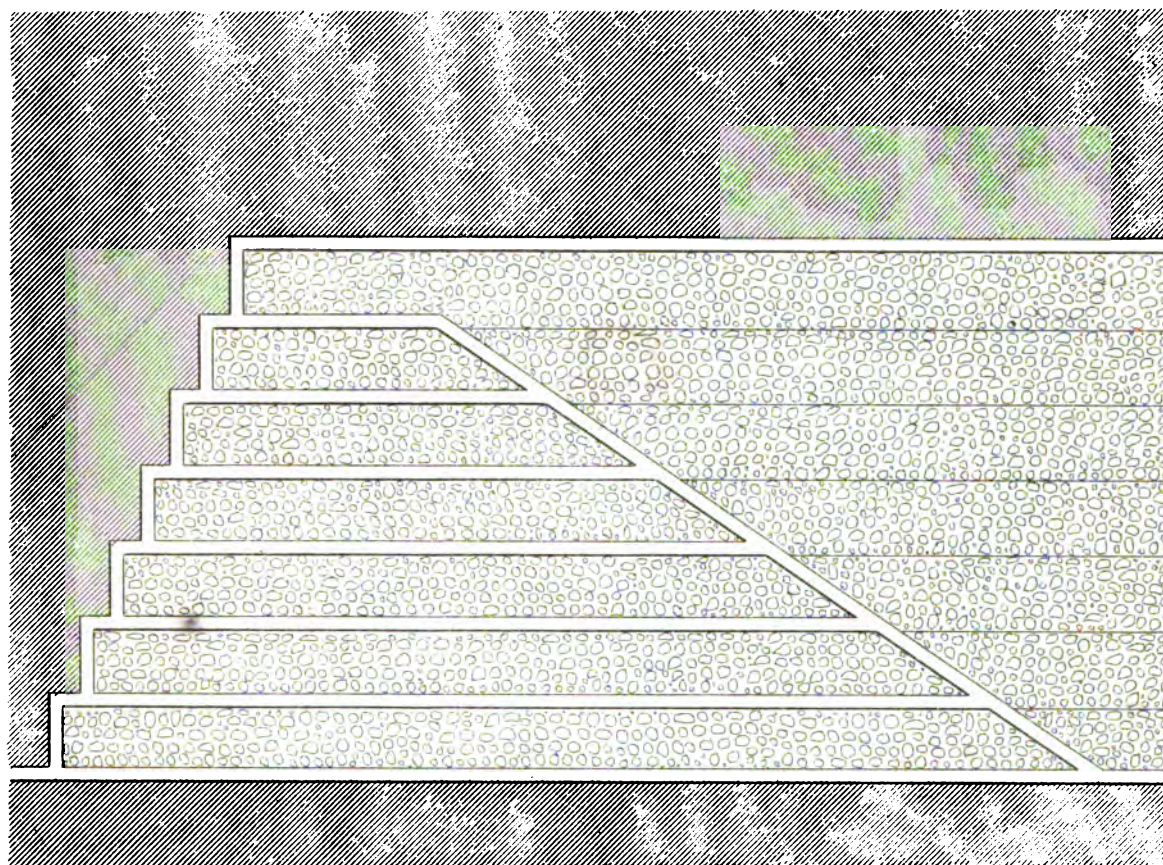
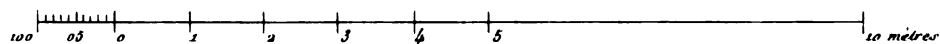


Fig. 216.



Echelle de la Fig. 215 de 0^m 01 pour 1 mètre



Echelle de la Fig 216 la 0^m 0005 pour 1 mètre

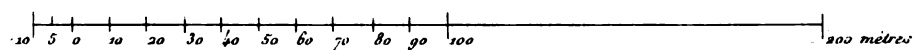
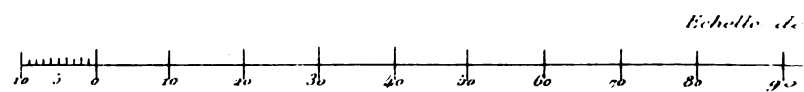
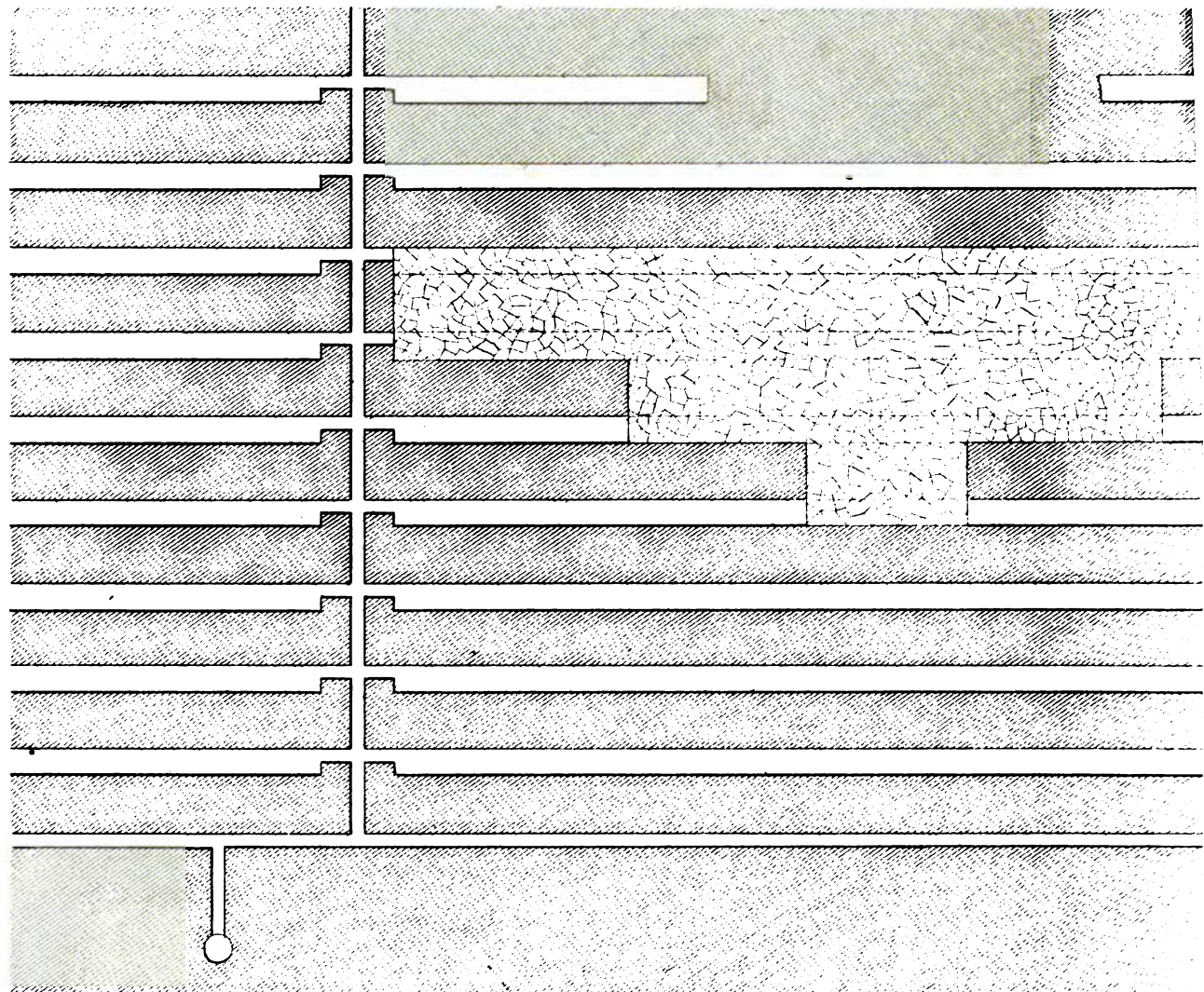
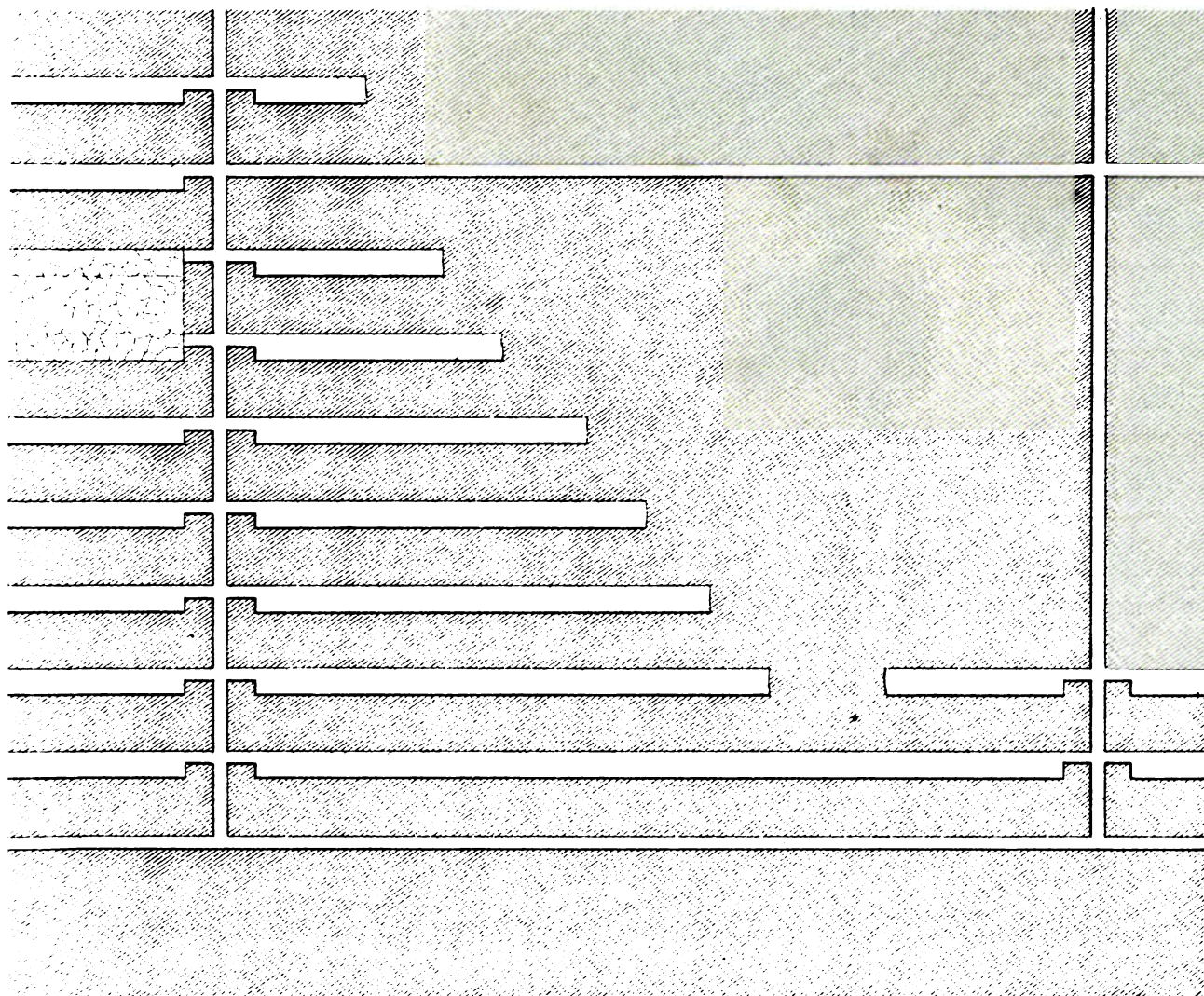


Fig.



217



m 0.01 pour 1 mètre

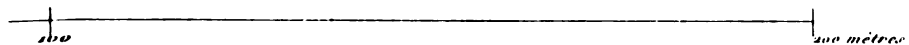




Fig. 218.

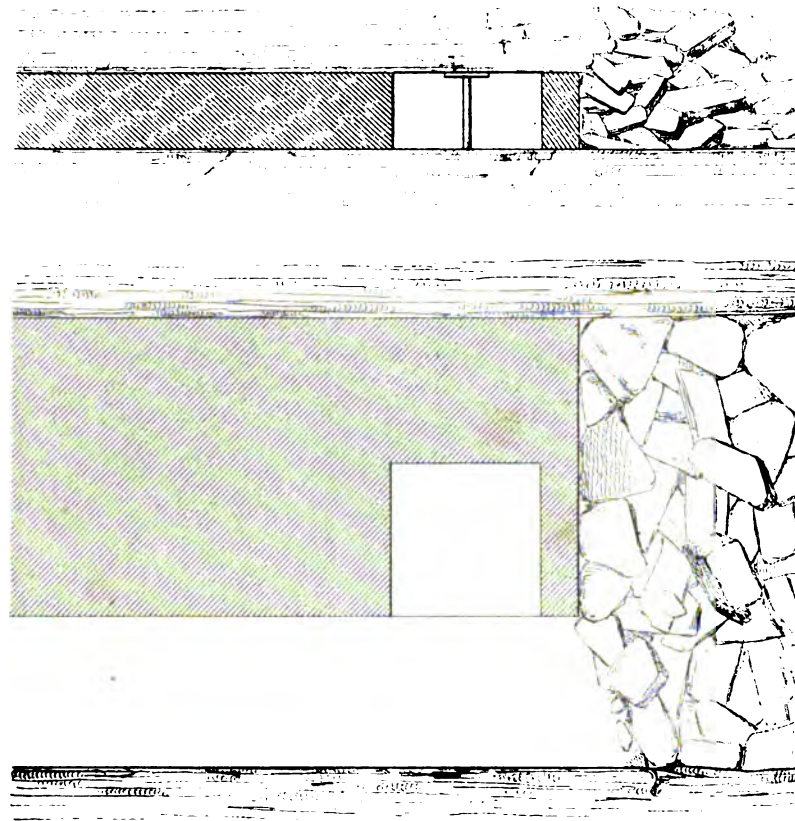


Fig. 219.

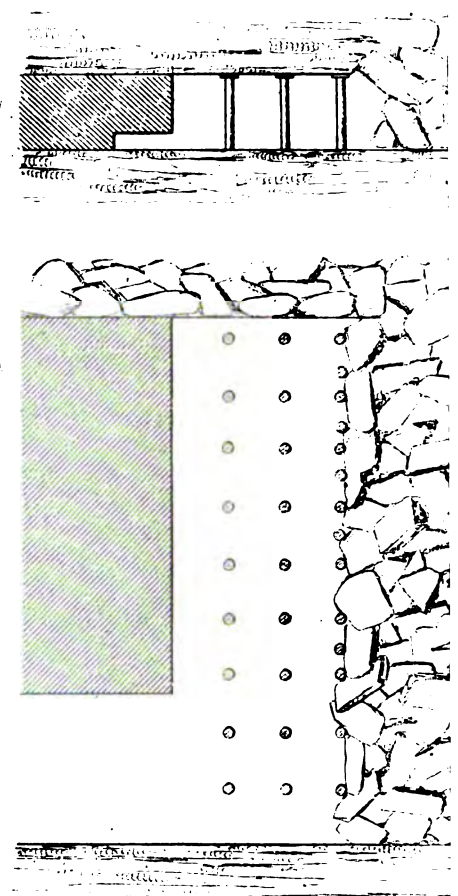


Fig. 222.

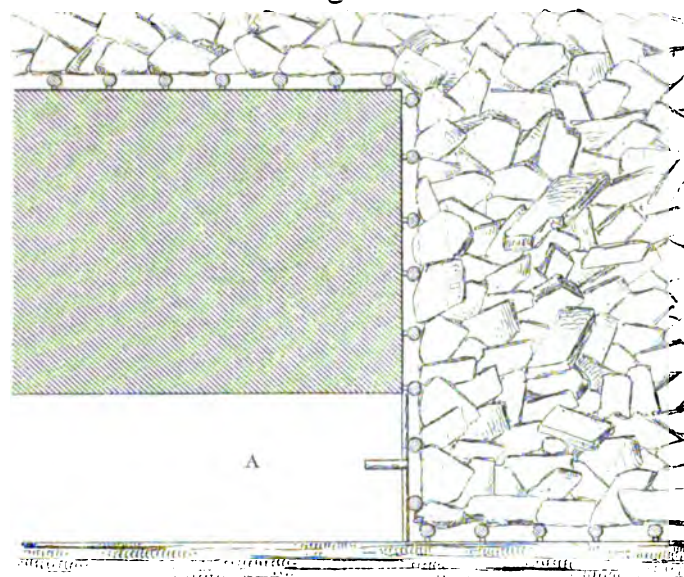
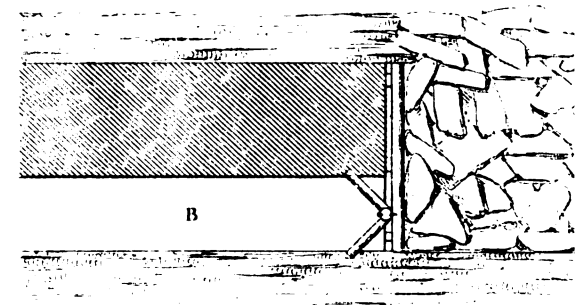
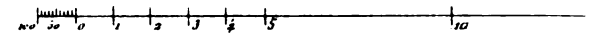


Fig. 223.



Echelle des fig. 218 et 222 de 0^m 005 pour 1 mètre



Echelle de la fig. 223 de 0^m 005 pour 1 mètre

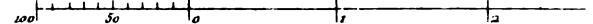


Fig. 220.

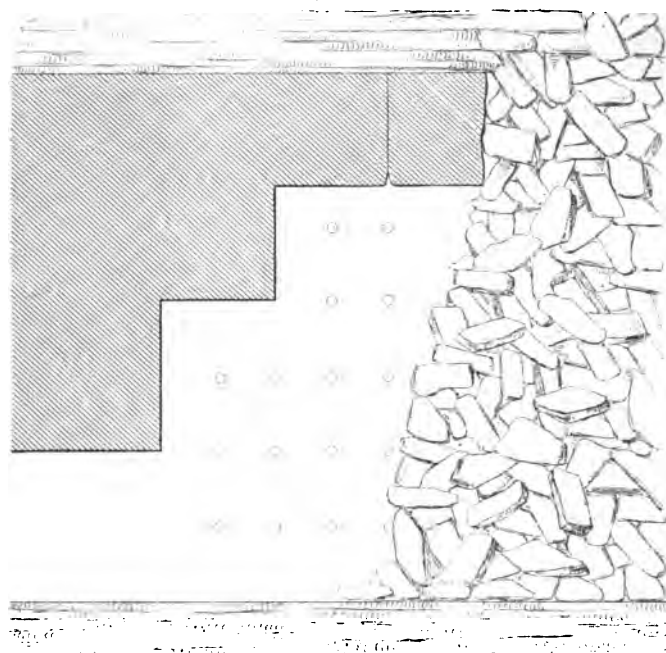


Fig. 221.

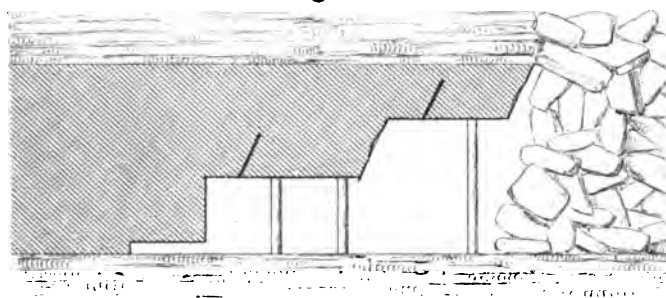


Fig. 222.

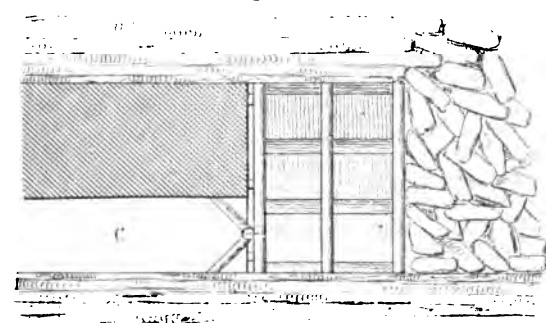


Fig. 223.

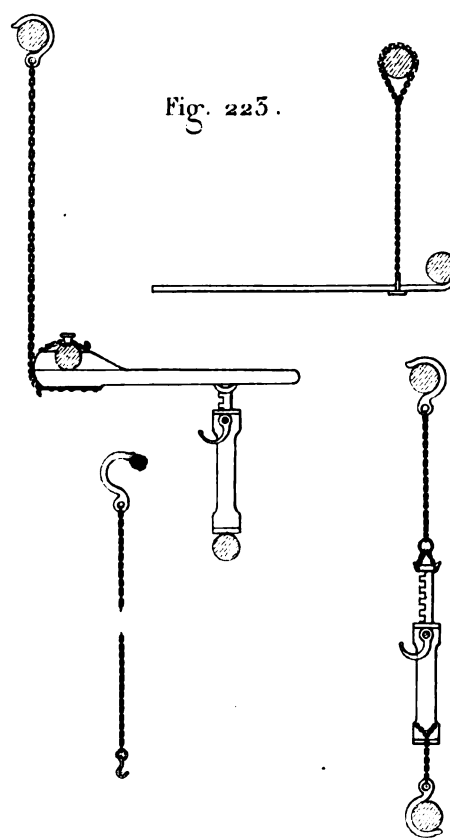
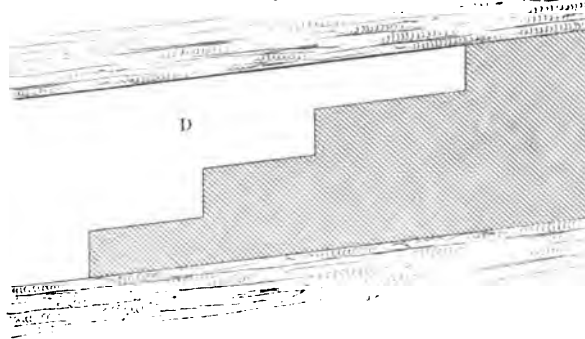


Fig. 222.



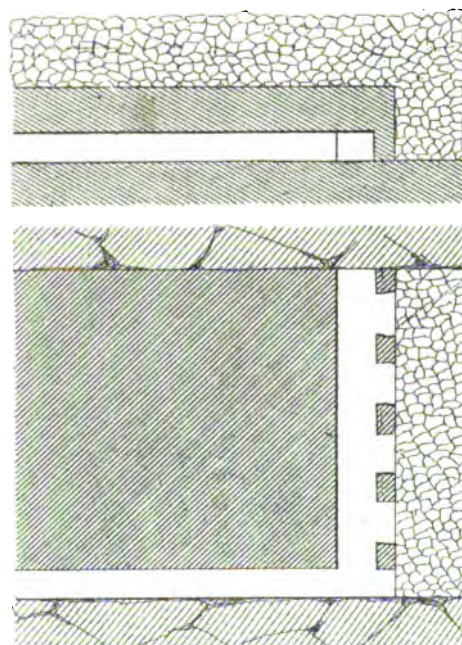
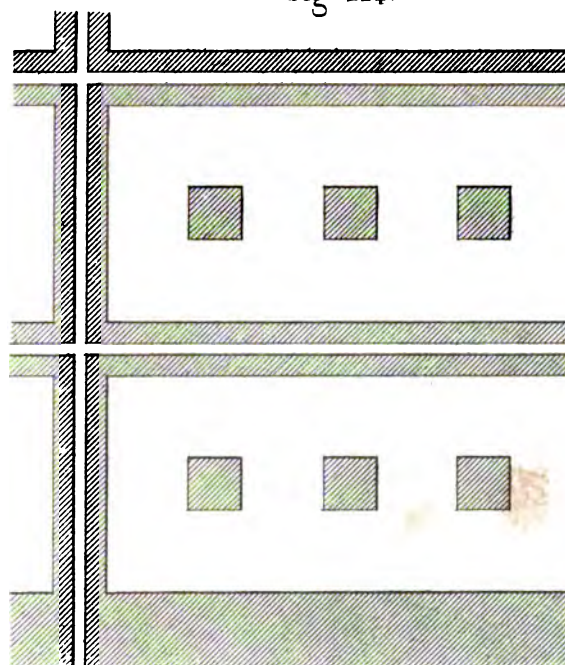
10

10

10

10

Fig. 224.



Echelle de la Fig. 224 de 0^m 001 pour 1 mètre

10 5 0

10

20

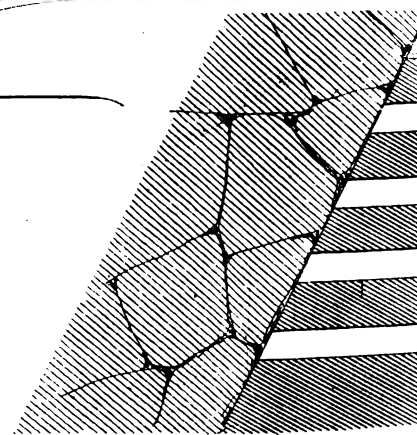
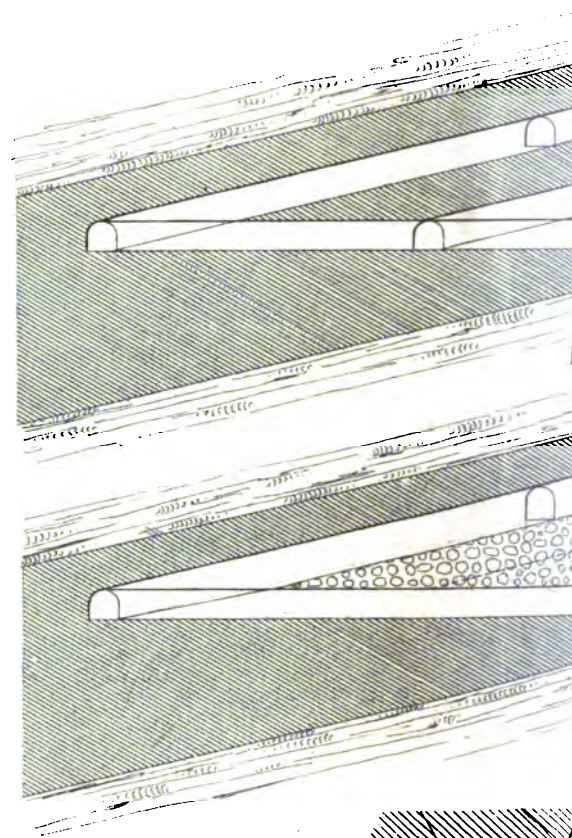
30

40

50

100 mètres

Fig. 229.



Echelle des Fig. 225, 226

10 5 0

10

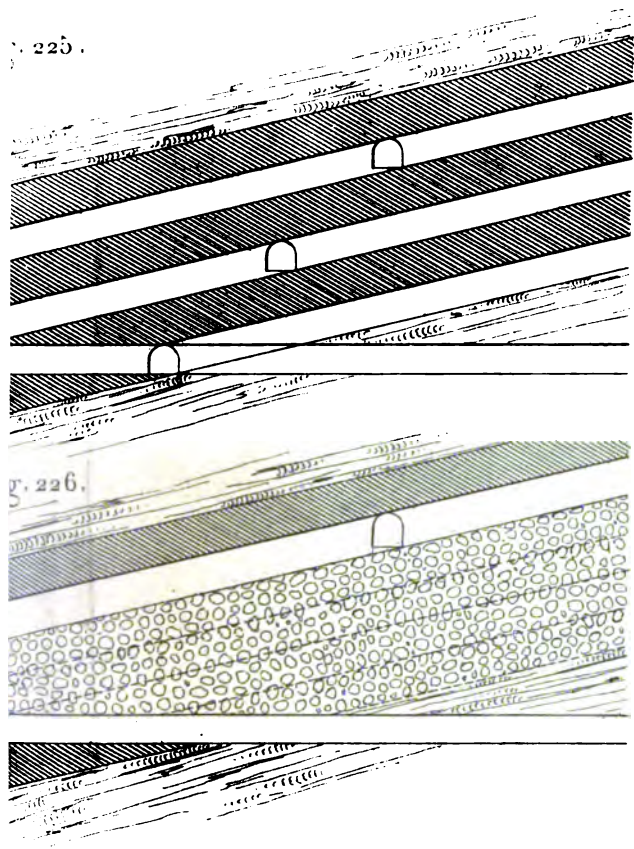


Fig. 227.



Fig. 228.

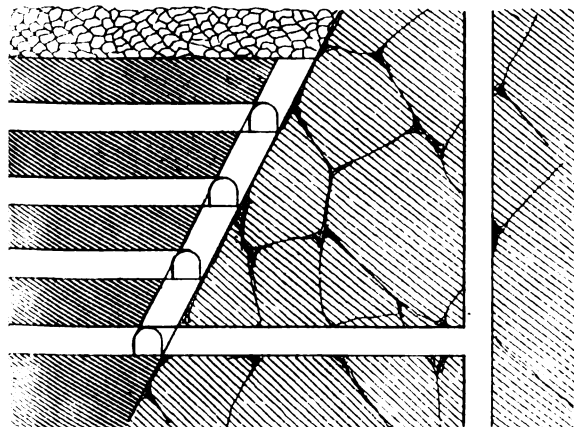
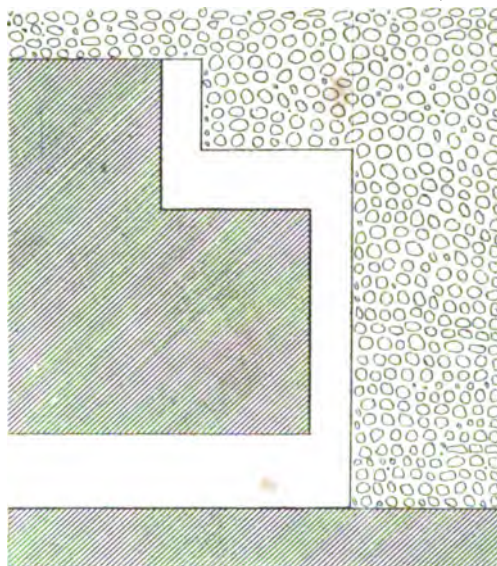


Fig. 229 de 0^m 002 pour 1 mètre

Echelle des Fig. 227 et 228 de 0^m 004 p^r 1 mètre

20 30 40 mètres

10 5 0 10 mètres

Fig. 230.

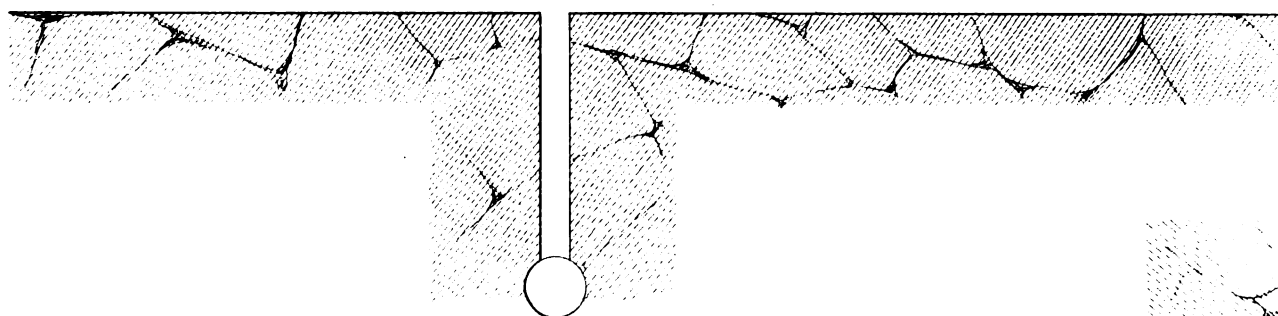
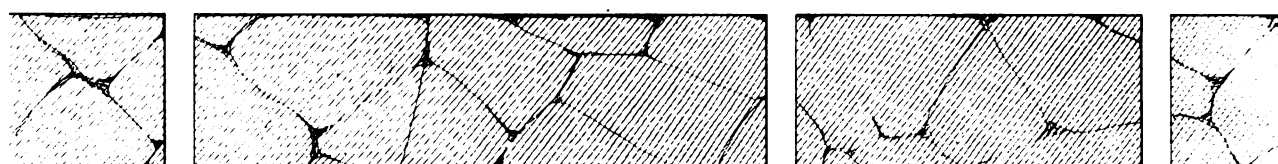
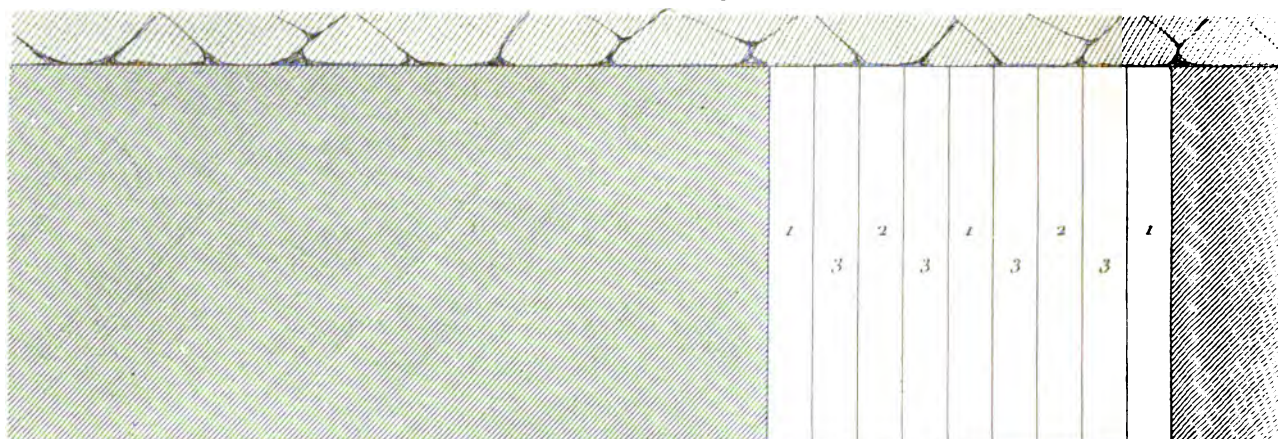
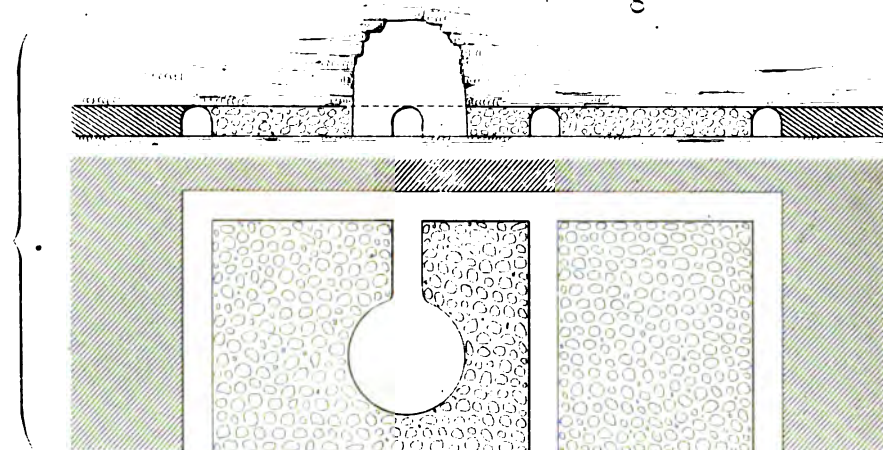


Fig. 233.



Echelle
10 30 50

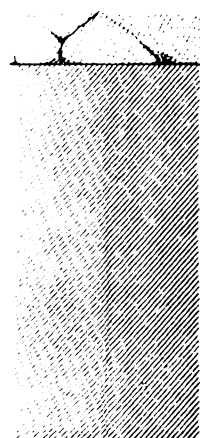


Fig. 251.

Fig. 252.

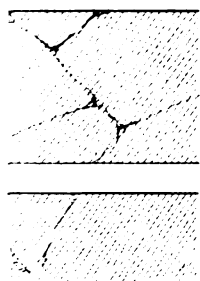
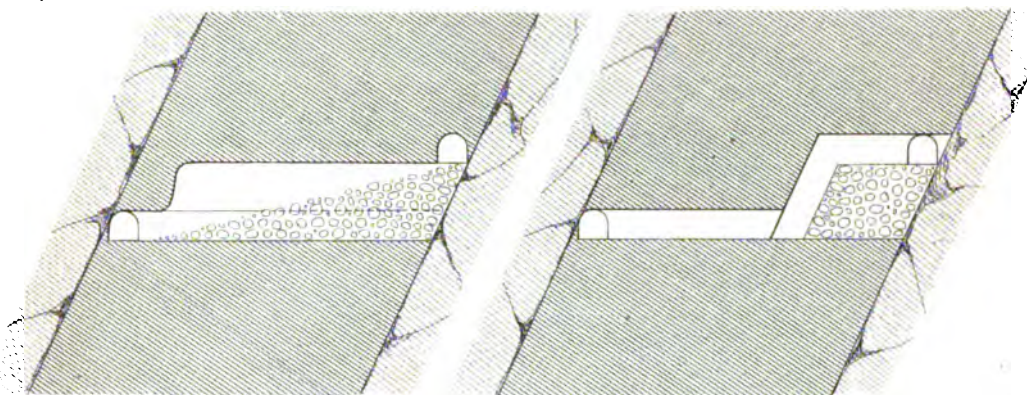
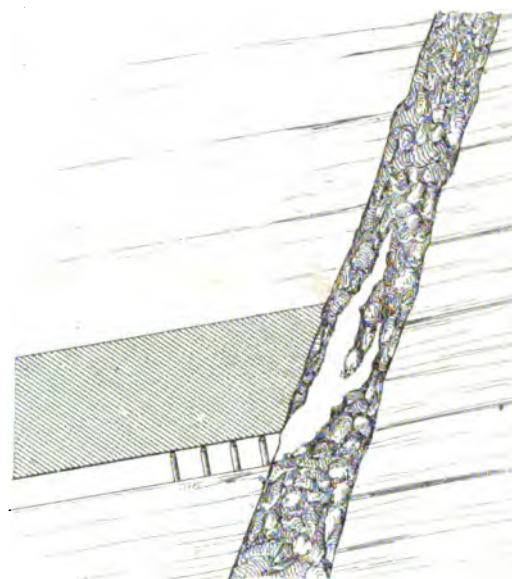
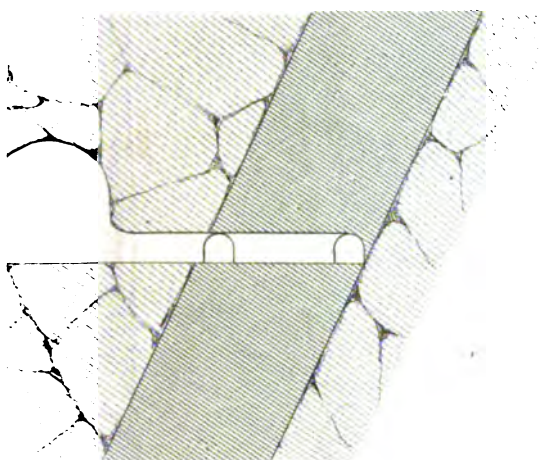


Fig. 254.

Fig. 255.



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de 0^m 002 pour 1 mètre

10 20 30 40 mètres

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